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IITRI Project Nos. L6116/L6121
Study No. 1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE
(TNT), HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND
TNT/RDX MIXTURES IN THE FISCHER 344 RAT

Final Report

Prepared by:

Barry S. Levine
E. Marianna Furedi
Donovan E. Gordon
John M. Burns
Paul M. Lish

IIT Research Institute
10 West 35th Street
Chicago, IL 60616

Supported by:

U.S. Army Medical Research
and Development Command
Fort Detrick, Frederick, MD 21701

Project Officer: Jesse J. Barkley, Jr.

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This study was conducted to evaluate the toxicity of the munitions compounds 2,4,6-trinitrotoluene (TNT; CAS Reg. No. 118-96-7) and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX; CAS Reg. No. 121-82-4), and their potential toxic interactions in Fischer 344 rats when administered in the diet for at least 13 weeks. The data derived were also to be used to select dose levels for comprehensive chronic toxicity/carcinogenicity studies. Groups of 10 rats per sex received TNT at doses of 1, 5, 25, 125 or 300 mg/kg/day; RDX at doses of 10, 30, 100, 300 or 600 mg/kg/day; and the following combinations of these		

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compounds: TNT 5/RDX 30 mg/kg/day, TNT 5/RDX 300 mg/kg/day, TNT 125/RDX 30 mg/kg/day, TNT 125/RDX 100 mg/kg/day, and TNT 125/RDX 300 mg/kg/day. Thirty rats per sex served as controls. Toxicologic endpoints included clinical signs, body weight, food consumption, hematology, clinical chemistry, organ weights, and gross and tissue morphology.

An approximate 10% reduction in body weight gain was seen for males receiving TNT 5 or 25 mg/kg/day, and for females administered TNT 125 mg/kg/day. Other toxic effects following the administration of TNT 25 mg/kg/day or greater included reduced food intake, hypercholesterolemia and anemia (reduced hemoglobin, hematocrit and erythrocyte counts). Splenomegaly with congestion and hemosiderosis of the red pulp, hepatomegaly with hepatocellular hypertrophy, testicular atrophy with degeneration of the seminiferous tubular epithelium and slight increases in kidney weights with deposition of pigment were also seen for rats receiving TNT 125 or 300 mg/kg/day. Elevated methemoglobin levels and cerebellar lesions were observed only at the TNT 300 mg/kg/day dose level. Hemosiderin-laden macrophages in the liver and splenic red pulp, methemoglobin production, and the lack of bone marrow toxicity suggested hemolysis as the mechanism of anemia.

RDX at doses of 100 mg/kg/day or greater resulted in mortality with mean survival times inversely correlated with dose level only a transient reduction in body weight gain was seen for females, even at the lowest lethal dose with survivors (RDX 100 mg/kg/day). Males administered RDX 30 or 100 mg/kg/day demonstrated reductions of 6% and 13%, respectively. Additional toxic effects observed for rats receiving RDX 30 mg/kg/day or greater included reduced food intake, hyperreactivity to approach, convulsions, leukocytosis and hypotriglyceridemia.

TNT-induced hypercholesterolemia and hepatomegaly with accompanying hepatocellular hypertrophy suggested induction of liver microsomal mixed function oxidase (MFO) activity as these responses frequently occur with MFO inducers. Since RDX is known to be metabolized by MFOs, the observed antagonistic effect of TNT on RDX-induced hypotriglyceridemia and mortality may have been related to an increased rate of RDX detoxification which was secondary to MFO induction.

The mechanisms of TNT-induced testicular atrophy and hypercholesterolemia may be related to its reported induction of MFO activity. MFO inducers have been shown to increase the rate of oxidative degradation of testosterone and to stimulate cholesterolgenesis which is consistent with testicular atrophy and hypercholesterolemia, respectively. Since RDX is metabolized by MFOs, it may have blocked TNT from MFO binding sites. This is consistent with the antagonistic effect of RDX on TNT-induced hypercholesterolemia, hepatocellular hypertrophy and testicular atrophy with its accompanying degenerative lesions. Thus, most of the toxic effects of TNT and RDX were antagonized following their co-administration. The mechanisms of these toxic interactions appeared to be related, at least in part, to alterations in liver microsomal MFO activity.

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IIT Research Institute
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and Development Command
Fort Detrick, Frederick, Maryland 21701

Project Officer: Jesse J. Barkeley, Jr

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Paul M. Lish

Paul M. Lish
Scientific Advisor
Life Sciences Research

Barry S. Levine

Barry S. Levine
Senior Toxicologist
Life Sciences Research

Maurline M. Preache

Maurline M. Preache
Head, Toxicology and
Pharmacology
Life Sciences Research

E. Marianna Furedi

E. Marianna Furedi
Research Toxicologist
Life Sciences Research

Alan M. Shefner

Alan M. Shefner
Associate Director
Life Sciences Research

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EXECUTIVE SUMMARY

This study was conducted to evaluate the toxicity of the munitions compounds 2,4,6-trinitrotoluene (TNT; CAS Reg. No. 118-96-7) and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX; CAS Reg. No. 121-82-4), and their potential toxic interactions in Fischer 344 rats when administered in the diet for at least 13 weeks. The data derived were also to be used to select dose levels for comprehensive chronic toxicity/carcinogenicity studies. Groups of 10 rats per sex received TNT at doses of 1, 5, 25, 125 or 300 mg/kg/day; RDX at doses of 10, 30, 100, 300 or 600 mg/kg/day; and the following combinations of these compounds: TNT 5/RDX 30 mg/kg/day, TNT 5/RDX 300 mg/kg/day, TNT 125/RDX 30 mg/kg/day, TNT 125/RDX 100 mg/kg/day, and TNT 125/RDX 300 mg/kg/day. Thirty rats per sex served as controls. Toxicologic endpoints included clinical signs, body weights, food consumption, hematology, clinical chemistry, organ weights, and gross and tissue morphology.

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FOREWORD

The U. S. Army Medical Bioengineering Research and Development Laboratory (USAMBRDL), Fort Detrick, Frederick, MD, has been conducting a research program since 1973 for the purpose of developing the scientific data base necessary for recommending water quality criteria for compounds unique to the munitions industry. A water quality criterion (as defined by the amended Clean Water Act, 1977) is a qualitative or quantitative estimate of the concentration of a pollutant in ambient waters that, when not exceeded, will ensure a water quality sufficient to protect a specified water use. The criterion is a scientific entity based solely on data and scientific judgement. It does not reflect considerations of economic or technological feasibility. Currently, a water quality criterion consists of two separate numerical limits, one for the protection of human health and the other for the protection of aquatic organisms. These numbers, when translated by the appropriate regulatory agency, can be the basis of enforceable discharge or effluent limitations in a point source discharge permit issued under the Clean Water Act.

Since a water quality criterion is to protect designated water uses, a diverse, multidisciplined research program was developed by USAMBRDL that includes "effects" studies on laboratory and domestic animals, wildlife species, aquatic organisms, plants, and economically important crops. In addition, extensive chemical and biological fate and persistence tests are conducted to provide information on the behavior of a pollutant in the aqueous environment. These kinds of data are especially useful for making site-specific translation of criteria into enforceable discharge limits.

This report represents a portion of the mammalian toxicology data base being developed by USAMBRDL on 2,4,6-trinitrotoluene and hexahydro 1,3,5-trinitro-1,3,5-triazine.

Animal Experimentation: Animal experiments were conducted according to the "Guide for the Care and Use of Laboratory Animals" (1978), DHEW Publication No. (NIH) 78-23, prepared by the Committee on Care and Use of Laboratory Animals of the Institute of Laboratory Animal Resources, National Research Council; the regulations and standards prepared by the Department of Agriculture; and the Public Law 91-579, "Laboratory Animal Welfare Act" (1970).

Disclaimer: The findings in this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.

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This report was prepared at IIT Research Institute, 10 West 35th Street, Chicago, Illinois 60616, under U. S. Department of Army Contract Nos. DAMD17-79-C-9120 (IITRI Project No. L6116) entitled "Determination of the Chronic Mammalian Toxicological Effects of TNT", and DAMD17-79-C-9161 (IITRI Project No. L6121) entitled "Determination of the Chronic Mammalian Toxicological Effects of RDX". Mr. Jesse J. Barkley, Jr., Environmental Protection Research Division, USAMBRDL, served as the Contract Officer's technical representative for these programs.

The work reported herein was conducted in the Toxicology and Pharmacology Section of the Life Sciences Division, and represents a portion of the overall effort of the above named research programs. Paul M. Lish, Ph.D., Scientific Advisor, served as Principal Investigator. Barry S. Levine, D.Sc., Senior Toxicologist, served as study director and toxicologist, and was responsible for the overall conduct of the study. John M. Burns, DVM, Senior Veterinary Pathologist, was responsible for supervision of gross necropsies, tabulation of gross necropsy data and the clinical pathology laboratory. Paula Lizak, B.S., Associate Toxicologist, was responsible for generation of clinical pathology data. Donovan E. Gordon, DVM, Ph.D., Consultant, Veterinary Pathology, was responsible for tabulation and evaluation of histopathology data. Eva M. Furedi, DVM, Research Toxicologist, supervised technical support and animal care personnel. Tony Rossignuolo, B.S., Assistant Toxicologist, and Dr. Furedi were responsible for the collection of test data. Richard Hughes, DVM, Ph.D. and Diane Frielnik, Hughes Research and Development Inc., Kalamazoo, MI., were responsible for preparation of histology slides. Josephine M. Reed, M.M., M.S., Supervisor, Quality Assurance, was responsible for the quality assurance program. Robert Remaly, B.S., Senior Engineer, prepared the test article premixes. Hugh J. O'Neill, Ph.D., Manager, Analytical Chemistry, and Walter C. Eisenberg, Ph.D., Senior Chemist, were responsible for chemical analyses of test articles, premix diets, and test diets. Leo Upchurch, M.S., Senior Statistician, provided statistical and computational assistance.

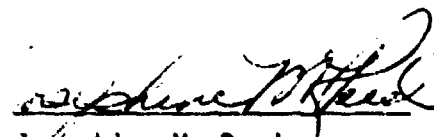
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QUALITY ASSURANCE STATEMENT

Biological laboratory operations were inspected on December 12, 1979 and January 15, February 1, 4, 15 and 22, 1980. Computerized data were audited August 11 through 13, 1980. The final draft report was audited between September 25 and October 6, 1980 and reviewed on October 20 and 21, 1981. Inspections and audits were performed by Josephine M. Reed assisted by Susan Nadolny. Operations were conducted in accordance with Life Sciences Quality Assurance criteria.

Analytical Chemistry data in the final draft report was audited between October 22 and October 26, 1981 by Kirit Parikh.

Raw data and specimens generated during the course of this study will be retained in the IITRI Life Sciences Archives as specified by government regulations.



Josephine M. Reed
Quality Assurance
Life Sciences Research



Kirit Parikh
Quality Assurance
Chemistry Research

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	11
II. MATERIALS AND METHODS	11
A. Test Articles	11
B. Test Diets	12
C. Animals	13
D. Experimental Design	14
E. Statistical Analysis	18
III. RESULTS	19
A. Premix and Test Diet Analyses	19
B. Food and Water Contaminants	19
C. Clinical Observations	20
D. Mortality	20
E. Body Weight	20
F. Food Consumption	21
G. Hematology	22
H. Clinical Chemistry	22
I. Organ Weights	23
J. Pathology	23
IV. DISCUSSION	25
V. RECOMMENDATIONS	29
VI. REFERENCES	30
TABLES	33
APPENDICES	
Appendix I - Chemistry Methodology	55
Appendix II - 5002 Certification Profile	63
Appendix III - Diversified Laboratories Chemistry Methods	65
Appendix IV - Hematology Methodology	67
Appendix V - Clinical Chemistry Methodology	71
Appendix VI - Individual Animal Data	75
Appendix VII - Mercury Content of 5002	277
Appendix VIII - Nitrate/Nitrite Content of 5002	279
Appendix IX - Chicago Water Chemical Analysis	281
Appendix X - Pathology Report	285
DISTRIBUTION LIST	363

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LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Mean/SD Actual Doses of TNT and RDX Received by Males (mg/kg/day)	34
2	Mean/SD Actual Doses of TNT and RDX Received by Females (mg/kg/day)	35
3	Premix Stability Analysis	36
4	Premix and Diet Analyses	37
5	Mortality of Male Rats	38
6	Mortality of Female Rats	39
7	Mean/SD Weight Values for Males (g)	40
8	Mean/SD Relative Body Weights for Males	41
9	Mean/SD Body Weight Values for Females (g)	42
10	Mean/SD Relative Body Weights for Females	43
11	Mean/SD Food Consumption Values for Males (g)	44
12	Mean/SD Food Consumption Values for Females (g)	45
13	Mean & SD Hematology Values for Males	46
14	Mean & SD Hematology Values for Females	47
15	Mean & SD Clinical Chemistry Values for Males	48
16	Mean & SD Clinical Chemistry Values for Females	49
17	Mean & SD Organ Weights for Males	50
18	Mean & SD Relative Organ Weights for Males (% Body Weight)	51
19	Mean & SD Organ Weights for Females (g)	52
20	Mean & SD Relative Organ Weights for Females (% Body Weight)	53
21	Pathology Summary	54

I. INTRODUCTION

The U.S. Army Medical Research and Development Command (USAMRDC) has been directed to evaluate the potential hazards to living systems of wastewater discharges from munitions facilities. Of primary concern are the toxicologic effects to mammalian systems of 2,4,6-trinitrotoluene (TNT; CAS Reg. No. 118-96-7) and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX; CAS Reg. No. 121-82-4). These high explosives are routinely used in filling shells and bombs, and commonly occur together as a 60:40 mix (TNT:RDX) known as Composition B. Wastewaters resulting from the loading of these explosives into shells are discharged into the environment without significant treatment and are subject to limitations imposed by governmental regulatory agencies. Evaluation of the potential hazards of these wastewaters to human health is therefore a necessary portion of the data-base required to establish comprehensive environmental criteria.

The present study was conducted to aid in this evaluation and assessed the subchronic toxicity of TNT and RDX, and their potential toxic interactions in Fischer 344 rats when administered in the diet for at least 13 weeks. The data derived were also to be used to select dose levels for chronic toxicity/carcinogenicity studies. Information ultimately derived from these comprehensive long-term toxicology studies will aid USAMRDC in developing criteria for the establishment of effluent standards and in defining levels of treatment for its pollution abatement program.

The study reported herein was conducted in accordance with the IITRI Quality Assurance Program designed to comply with FDA Good Laboratory Practice Regulations (1). Thus, all terms used in this report, e.g. test article, raw data, specimens, etc., are in agreement with the definitions set forth in the aforementioned document.

II. MATERIALS AND METHODS

A. Test Articles

Trinitrotoluene (TNT: CAS Reg. No. 118-96-7) batch no. Vol 11-011, grade one flake, and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX: CAS Reg. No. 121-82-4) batch no. HOL 435-37, 100 pounds each, were made available for this study from stocks at the IITRI Kingsbury Ordnance Plant (KOP) Explosive Facility, La Porte, IN. The test articles were stored at the facility at ambient room temperature and relative humidity, and in the dark. Upon initiation and at termination of the treatment phase of the study, 30 g samples of each were taken and stored under conditions similar to those for the batches.

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The purity of the test articles was determined by high performance liquid chromatography as described in the appropriate section of Appendix I with analytical standards provided by the Sponsor. TNT was found to have a purity of $99.1\% \pm 0.4\%$. RDX purity was $84.7\% \pm 4.5\%$; the main contaminant was HMX and represented approximately 10% of the sample (estimated concentration on the basis of percent area integration). The other major impurities were not determined.

Particle size analysis was done in November of 1979, by the Fine Particles Research Section of the Chemistry and Chemical Engineering Division of IIT Research Institute. It showed that 89% of unground RDX was of particle size greater than $150\ \mu\text{m}$, and 58.8% was greater than $450\ \mu\text{m}$. The ball milling procedure and manufacture of a 50% premix of RDX in Purina Certified Rodent Chow No. 5002 resulted in substantial reduction of particle size. Following the ball milling procedure, 51.7% of the particles by count were distributed below $22\ \mu\text{m}$, and 89.3% by size were below $66\ \mu\text{m}$. Particle size data for a 50% premix of TNT in Purina Certified Rodent Chow No. 5002 showed that approximately 59.1% of the TNT particles were below $44\ \mu\text{m}$, and 85% were less than $110\ \mu\text{m}$.

B. Test Diets

Premixes for each test article, approximately 10% in Purina Certified Rodent Chow No. 5002, Ralston Purina Co., St. Louis, MO., hereafter referred to as 5002, were prepared on a monthly basis at the Kingsbury facility by Chemistry Division personnel. Undiluted TNT and RDX were handled in accordance with procedures for explosive and fire hazards. The test articles were separately ball milled with equal parts of 5002 and subsequently diluted with additional 5002 in a twin shell blender to yield approximate 10% premixes. The quantities of premixes prepared were 3 and 8 kg for TNT and RDX, respectively.

Prior to the onset of the study, RDX and TNT premixes were tested for homogeneity, stability, and recovery of the test articles. Homogeneity testing consisted of randomly selecting five samples from the premixes and analyzing for test article concentration. Premix stability was monitored by conducting homogeneity tests at weekly intervals for 7 weeks. Three test diets used in Test Week 1 were also monitored for stability. They were sampled on the day they were placed in the animal's cages and also one week later from food cups placed in empty cages. Premix recovery studies consisted of adding a known quantity of test article to a weighed quantity of untreated 5002 in a measured volume of acetonitrile (the solvent used in the extraction procedure) to achieve the calculated premix concentration. The spiked samples subsequently underwent the identical procedures as the actual premixes.

Toxicology Section personnel received the test articles as approximate 10% premixes in 5002. These premixes posed little explosive or fire hazard as demonstrated by negative results in explosive sensitivity tests conducted by Mr. Robert Remaly at the KOP facility. In these "plate dent" tests, separate columns of TNT and RDX premixes were subjected to the shock from a strong explosive charge. Neither premix was detonated by this procedure as evidenced by a lack of an effect on a "witness" plate placed at their base.

Following chemical analysis of the premixes to determine test article concentration (Appendix I), sufficient quantities were subsequently diluted with 5002 in a twin shell blender by toxicology personnel to achieve the concentrations of the test article(s) necessary to administer the required dose levels on a mg/kg/day basis. The previous week's body weights and most recent food consumption measurements for each test group by sex were used to calculate the desired dietary concentrations of the test article(s), and 2 kg of each test diet was routinely prepared.

One sample of 5002, lot 10-22-79-J, was analyzed during the course of the study by Diversified Laboratories, Fairfax, VA, for those contaminants listed in the 5002 certification profile as shown in Appendix II. The references to the procedures used by Diversified Laboratories are in Appendix III. The mercury level in lot 10-22-79-J exceeded the maximum concentration as stated in the Certification Profile and was subsequently reanalyzed. Samples of each 5002 lot used in the study were also analyzed for nitrate and nitrite content.

C. Animals

Fischer 344 (F344) rats, obtained from ARS Sprague Dawley, Madison, WI, were used for this study. The animals were received in two shipments: 227 males on October 29, 1979 and 228 females on November 12, 1979. They were 3 to 4 weeks old upon arrival and random body weights recorded within three days of receipt were 56 ± 6 g (males) and 53 ± 6 g (females). The shipments were housed in separate air conditioned (21-23°C) rooms at ambient relative humidity, 30-70%, and on a 12 hour light/12 hour dark cycle. Each room served as a quarantine and test room, and no other test animals were in the rooms. The animals were housed three per polycarbonate cage (16.5" x 8"; 8" height) with Ab-sorb-dri® bedding (Ab-sorb-dri Inc., Rochelle Park, N.J.) from arrival until test animal selection at the onset of Test Week -2 (2 weeks prior to initiation of treatment). At that time, they were housed two per cage until their termination. Animals were transferred to clean cages twice weekly. Each animal was identified during the quarantine period by a combination of cage number and ear punch. Animals placed on test received a study-unique test animal number (N=360) which appeared as an ear tag and was included with necropsy specimens.

Upon arrival at the IITRI animal facility, the animals were held in quarantine for one week. During this period, they were observed for signs of disease, general unthriftiness, poor coat, discharges from body openings, abnormal feces, etc. Any animals found to be unhealthy were eliminated from the test animal selection process.

Animals received 5002 rodent chow from arrival until their termination, except during a 17 to 19 hour fast prior to either blood collection or routine sacrifice. The food was available from powdered diet food cups. Tap water was available *ad libitum* from glass bottles.

D. Experimental Design

Following the quarantine period, test-eligible animals from each shipment were separately assigned to the treatment groups shown below on the basis of body weight. The weights for each sex were listed in descending order, stratified into blocks equal to the number of treatment groups per sex with the control group being considered three groups. One animal from each block was randomly assigned to each test group and three animals from each block to the control group. Following assignment to treatment groups, all animals were randomly assigned test animal numbers as shown below. Body weight ranges at randomization were 68-111 g (males) and 67-93 g (females).

Treatment Group	Treatment	Dose Level(s) (mg/kg/day)	Animals/ Sex	Test Animal Number (males)	Test Animal Number (females)
I	--	0	30	1 - 30	181 - 210
II	TNT	1	10	31 - 40	211 - 220
III	TNT	5	10	41 - 50	221 - 230
IV	TNT	25	10	51 - 60	231 - 240
V	TNT	125	10	61 - 70	241 - 250
VI	TNT	300	10	71 - 80	251 - 260
VII	RDX	10	10	81 - 90	261 - 270
VIII	RDX	30	10	91 - 100	271 - 280
IX	RDX	100	10	101 - 110	281 - 290
X	RDX	300	10	111 - 120	291 - 300
XI	RDX	600	10	121 - 130	301 - 310
XII	TNT/RDX	5/30	10	131 - 140	311 - 320
XIII	TNT/RDX	5/300	10	141 - 150	321 - 330
XIV	TNT/RDX	125/30	10	151 - 160	331 - 340
XV	TNT/RDX	125/100	10	161 - 170	341 - 350
XVI	TNT/RDX	125/300	10	171 - 180	351 - 360

This procedure was performed at the onset of Test Week -2.

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The study was conducted in two phases corresponding to the two shipments. Thus, males were always 2 weeks ahead of females. The animals were approximately 6-7 weeks old upon initiation of treatment and body weight ranges recorded during Test Week -1 (the most recent data prior to initiation of treatment) were 93-149 g (males) and 80-115 g (females). The first day of exposure to the test articles was November 19, 1979 for males, and December 3, 1979 for females.

The appropriate test diets were available to the test animals *ad libitum* until their termination except during a 17 to 19 hour fast prior to either blood collection in Test Week 13 or routine sacrifice in Test Week 14 or 15. Thus, all animals received the appropriate test diet until approximately one day prior to their routine sacrifice. Weekly test diets were prepared for each treatment group by sex on the basis of the most recent body weight and food consumption data. Doses received by test animals based on actual food consumption were subsequently calculated and are shown in Tables 1 and 2.

Commencing with Test Week -1 until their termination, all animals were observed once daily in the morning for any pharmacologic and/or toxicologic signs. Afternoon mortality checks were initiated in Test Week 2 for males and Test Week 1 for females. Physical examinations which included body weights and palpations for masses were conducted weekly from Test Week -1 until termination. Weekly food consumption was measured for each cage of two test animals commencing with Test Week -2 through Test Week 13, and mean daily food consumption per animal was calculated from these data.

Clinical chemistry and hematology tests were performed for all surviving animals during Test Week 13. Approximately 1.5-2.0 ml of blood was collected from each animal via the sublingual plexus after a 17 to 19 hour fast. The specimens were obtained from two animals per sex per test group and six animals per sex per control group each day over a 5 consecutive day period. The samples were collected and analyzed in a randomized order, and the following parameters were measured.

HEMATOLOGY

Hematocrit	Erythrocyte count
Hemoglobin	Leukocyte count,
Mean corpuscular volume (MCV)	total and differential
Mean corpuscular hemoglobin (MCH)	Reticulocyte count
Mean corpuscular hemoglobin concentration (MCHC)	Methemoglobin

CLINICAL CHEMISTRY

Glucose	Total cholesterol
Blood urea nitrogen (BUN)	Total protein
Glutamic-pyruvic transaminase (SGPT)	Albumin
Triglycerides	Globulin (Total protein minus albumin)

Methods used to measure the above parameters are listed in Appendix IV (hematology) and Appendix V (clinical chemistry).

All surviving test animals were sacrificed and necropsied during Test Weeks 14 and 15. One animal per sex per test group and three animals per sex per control group, randomly selected, were sacrificed each day during this 10 day period (weekends excluded). Terminal body weights were recorded immediately prior to sacrifice following a 17 to 19 hour fast. Euthanasia was accomplished with carbon dioxide anesthesia followed by exsanguination from the abdominal aorta. All animals which died spontaneously were also necropsied. The necropsy procedure was a thorough and systematic examination and dissection of the animal viscera and carcass and collection and fixation of the following tissues:

Adrenals	Mammary gland
Brain*	Muscle, skeletal
Cecum	Nasal turbinate
Colon	Pancreas
Costochondral junction, rib	Pituitary
Duodenum	Prostate
Epididymis	Rectum
Esophagus	Salivary gland
Eyes and optic nerves	Seminal vesicles
Gonads*	Sciatic nerve
Gross lesions	Skin, abdominal
Heart*	Spinal cord (cervical)
Ileum	Spleen*
Jejunum	Sternum, including marrow
Kidneys*	Stomach
Larynx	Thymus
Liver*	Thyroids (parathyroids)
Lungs and mainstem bronchi	Tissue masses
Lymph nodes:	Trachea
mesenteric	Uterus
mandibular	Urinary bladder

Organs marked with an asterisk (*) were weighed at routine necropsy.

All tissues, except eyes, testes and bone marrow smears, were fixed at a thickness not exceeding 0.5 cm in 10% neutral buffered formalin (NBF) which was changed 24 hours later. Eyes and testes were fixed in 3% aqueous glutaraldehyde and Bouin's Solution, respectively, for 24 hours. They were transferred to 50% ethanol for 24 hours, then placed in 70% ethanol. Bone marrow smears were prepared from the femur, air-dried and fixed in absolute methanol. Lungs and urinary bladder were inflated with NBF prior to immersion in this fixative. Histologic preparations were done by Hughes Research and Development Inc., Kalamazoo, MI, and all tissues examined microscopically were cut at a thickness of 4 to 6 μ m and stained with hematoxylin and eosin.

Based on review of all data collected prior to histopathology examination, all test animals in all treatment groups were subjected to either a level 1 or level 2 histopathologic examination as follows:

<u>Treatment Group</u>	<u>Test Article(s)</u>	<u>Dose (mg/kg/day)</u>	<u>Histopathology Level</u>
I	—	—	1
II	TNT	1	2
III	TNT	5	2
IV	TNT	25	2
V	TNT	125	2
VI	TNT	300	1
VII	RDX	10	2
VIII	RDX	30	1
IX	RDX	100	1
X	RDX	300	2
XI	RDX	600	2
XII	TNT/RDX	5/30	2
XIII	TNT/RDX	5/300	1
XIV	TNT/RDX	125/30	1
XV	TNT/RDX	125/100	2
XVI	TNT/RDX	125/300	2

Comprehensive histopathologic examination (level 1) was defined as microscopic examination of the following tissues and/or organs.

Adrenals	Lungs and mainstem bronchi
Brain (3 sections)*	Mammary gland
Colon	Mesenteric lymph node
Duodenum	Pancreas
Esophagus	Prostate
Eyes and optic nerves (if either is grossly abnormal)	Spinal cord (if neurologic signs are present)
Gonads	Spleen
Gross lesions	Sternum including marrow
Heart	Stomach
Ileum	Tissue masses
Jejunum	Trachea
Kidneys	Uterus
Liver	Urinary bladder

Limited histopathologic examination (level 2) was defined as microscopic examination of at least the following tissues and/or organs:

Brain (3 sections)*	Kidneys
Gonads	Liver
Heart	Spleen

*(1) frontal cortex and basal ganglia; (2) parietal cortex and thalamus; and (3) cerebellum and pons.

E. Statistical Analysis

The analyses of body weight and food consumption data considered the change relative to Test Week -1. Body weight, food consumption, clinical chemistry, hematology and organ weight data were analyzed by one-way Analysis of Variance tests for each sex. Dunnett's t test was used when a significant F-ratio was observed.

Individual animal data are presented in Appendix VI. The table numbers for these data identify the summary table number and treatment group, e.g. 7-VII (Table No. 7, Treatment Group VII).

III. RESULTS

A. Premix and Test Diet Analyses

The homogeneity studies for the TNT and RDX approximate 10% premixes demonstrated that both were well mixed. Data obtained were as follows: TNT, $\bar{X} \pm SD = 10.16\% \pm 0.16\%$, coefficient of variation (CV) = 1.6%; RDX, $\bar{X} \pm SD = 9.56\% \pm 0.19\%$, CV = 2.0%. The TNT and RDX premixes were also observed to be stable over a period of seven weeks. The mean concentrations of the RDX and TNT premixes used in the stability study ranged from 9.49-9.94% and 10.05-10.57%, respectively. Recovery studies for the premixes indicated quantitative extraction and the results were as follows: TNT, $\bar{X} \pm SD = 99\% \pm 1.0\%$; CV = 1.0%; RDX, $\bar{X} \pm SD = 101.0\% \pm 0.6\%$; CV = 0.6%.

The premixes used for the preparation of the test diets were within 0.67% (absolute difference) of their intended concentrations, and had a standard deviation of $\leq 0.34\%$. Analysis of three test diets used in Test Week 1 demonstrated no more than a 11% difference from their calculated concentrations. In addition, these test diets appeared stable under ambient animal room conditions (Tables 3 and 4).

B. Food and Water Contaminants

Results of the analysis of 5002, lot no. 10-22-79-J, for contaminants are shown in Appendix II. PCB content was 3.7-times (0.55 ppm) the ceiling value (0.15 ppm). The level of mercury found in the sample was about 12-times higher (2.4 ppm) than the maximum specified in the certification profile (0.2 ppm). The same lot of 5002 was spiked with 2.72 ppm mercury. The spiked and unspiked samples were subsequently tested by several laboratories and the results are shown in Appendix VII. It appears that the original measurement of 2.4 ppm may have been in error.

A sample from each 5002 lot was analyzed for nitrate and nitrite content. The results are shown in Appendix VIII. Analytical results obtained from samples of Chicago water are contained in Appendix IX.

C. Clinical Observations

Lethargy and/or ataxia were seen during Test Week 1 and to a lesser extent during subsequent test weeks for several test animals receiving either TNT, RDX or TNT/RDX combinations. At the RDX 600 mg/kg/day dose level, convulsions and/or tremors were observed for one female and two male rats prior to their death. Rats receiving RDX 100 mg/kg/day or higher were hyperreactive to approach. Dark reddish nasal discharge, suggestive of epistaxis or fighting, was seen more frequently for males receiving RDX 600 or 300 mg/kg/day, alone or in combination with TNT, than for the remaining test animals. Female rats administered RDX 100 mg/kg/day or TNT 125/RDX 100 mg/kg/day occasionally displayed serous or mucous genital discharge upon physical examination. Smaller than normal size testes were initially apparent at Test Week 6 upon palpation for some of the males receiving TNT 300 mg/kg/day. This phenomenon may have been observed to a lesser extent in rats administered TNT 125/RDX 100 mg/kg/day. Red-stained bedding was seen at all TNT dose levels, either alone or in combination with RDX, except for the lowest TNT dose level (TNT 1 mg/kg/day). Sporadic signs observed which were not considered to be treatment-related on the basis of their distribution included diarrhea, chromodacryorrhea, penile discharge, serous nasal discharge and white precipitate on the vulva.

D. Mortality

Mean survival times for rats administered RDX were inversely correlated with dose level and a sex difference was not apparent. TNT increased mean survival times for both sexes when co-administered with either 100 or 300 mg/kg/day of RDX. One rat of each sex receiving TNT 300 mg/kg/day died during Test Week 13 within a few days after blood collection. As this dose level was observed to induce significant anemia (Section IV-G), the added stress of blood volume reduction may have contributed to their death. One of these animals, however, also demonstrated minimal cerebellar vacuolation upon histologic examination (Section IV-J) (Tables 5 and 6).

E. Body Weight

Dose-related reductions in body weight gains were, in general, observed for TNT- and to a lesser extent for RDX-treated rats throughout the 13 week treatment period. The following discussion is based on relative body weight values compared to the appropriate control group. At TNT 5 and 25 mg/kg/day, approximate 10% reductions in body weight gain were seen for males by Test Week 13. Although female body weight gains were unaffected at these doses, an approximate 10% reduction of body weight gain was observed at 125 mg/kg/day. A very slight reduction, approximately 5%, was apparent for males administered 1 mg/kg/day of TNT. At the highest TNT dose level, (300 mg/kg/day), reductions in body weight gains at Test Week 13 were approximately 46% and 38% for males and females, respectively (Tables 7-10).

Female rats appeared to be less sensitive than males to RDX intoxication on the basis of body weight changes. Although a slight decrease in body weight gain was initially seen for female rats at RDX 100 mg/kg/day, similar body weights were observed for these rats and control females by Test Week 9 until termination. At Test Week 9, approximate reductions for males administered RDX 10, 30 or 100 mg/kg/day, were 6%, 13% and 35%, respectively, and remained as such through Test Week 13.

Reductions in body weight gains (percent changes) appeared, in general, to be additive for male rats receiving combinations of TNT and RDX. For example, approximate reductions in body weight gains for males at Test Week 5 for TNT 125 mg/kg/day, RDX 100 mg/kg/day and TNT 125/RDX 100 mg/kg/day were 19%, 44%, and 58%, respectively. A greater than additive response, however, was seen for TNT/RDX-treated females throughout the treatment period. At Test Week 5, values for females administered TNT 125 mg/kg/day, RDX 30 mg/kg/day and TNT 125/RDX 30 mg/kg/day, were 23%, 2% and 46%, respectively. Thus, although RDX 30 mg/kg/day alone had no demonstrable effect on body weights, the addition of this dose to 125 mg/kg/day of TNT resulted in a significantly greater response, about two-fold, than TNT 125 mg/kg/day alone. This same phenomenon was also seen after Test Week 8 at which time RDX 100 mg/kg/day (the highest RDX dose level with survivors) did not affect body weight. Thus, significantly greater reductions in body weight gains were seen for females receiving TNT 125/RDX 100 mg/kg/day than for TNT 125 mg/kg/day-treated females from Test Week 9 until termination.

F. Food Consumption

Dose-related decreases in food consumption were observed for TNT- and RDX-treated rats. Slight reductions in food intake occurred for females and possibly to a lesser extent for males receiving 125 or 300 mg/kg/day of TNT. By contrast, males appeared to be more sensitive than females to RDX-induced food intake restriction. Decreased food intake for males was seen at the highest RDX dose with survivors (RDX 100 mg/kg/day), whereas females at this dose had reduced food intake only during the first 3 test weeks. In addition, food consumption from Test Week 4 until termination was similar for females receiving either TNT 125, TNT 125/RDX 30 or TNT 125/RDX 100 mg/kg/day. The reduction of food intake in male rats receiving combinations of TNT and RDX appeared to be additive. For example, food consumption was decreased when compared to their respective controls during Test Week 5 for males administered TNT 125 mg/kg/day, RDX 100 mg/kg/day or TNT 125/RDX 100 mg/kg/day by 6%, 26%, and 32%, respectively. Corresponding values for these three treatment groups during Test Week 12 were 10%, 5% and 17% (Tables 11-12).

G. Hematology

Dose-dependent anemia (decreased hematocrit, hemoglobin and erythrocyte counts) was observed for TNT-treated rats. Males appeared to be slightly more sensitive as 25 mg/kg/day of TNT resulted in statistically significant reductions in these parameters, whereas only marginal decreases were apparent for female rats at this dose level. Males and females receiving 300 mg/kg/day also demonstrated statistically significant methemoglobin production. Treatment of rats with RDX did not induce an anemic state. In addition, rats receiving combinations of TNT and RDX showed responses similar to animals given corresponding TNT doses alone.

Compensatory responses which occurred as a result of TNT-induced anemia included reticulocytosis, macrocytosis and elevated levels of nucleated erythrocytes. Macrocytic erythrocytes seen only at TNT 300 mg/kg/day were marginally hypochromic, although absolute mean corpuscular hemoglobin levels were slightly elevated.

Slight but statistically significant leukocytosis was seen for females at all RDX dose levels. Slight increases in leukocyte counts may have also occurred for males at 100 mg/kg/day of RDX, but an N of 2 probably precluded statistical significance. None of these elevations was accompanied by any changes in the proportion of leukocyte cell types (Tables 13 and 14).

H. Clinical Chemistry

Dose-related decreases in serum triglyceride levels were observed for RDX-treated rats. At the lowest RDX dose level (RDX 10 mg/kg/day), slight but statistically insignificant reductions were apparent. By contrast, TNT may have resulted in slight elevations in serum triglycerides. Although male rats administered 125 mg/kg/day of TNT had a 33% elevation in this parameter, which was not statistically significant, males receiving 300 mg/kg/day of TNT had values similar to control animals. Females at this latter dose, however, demonstrated a statistically significant increase of 28%. Although TNT may or may not have elevated serum triglyceride levels, it did appear to oppose RDX-induced hypotriglyceridemia in both sexes. For example, relative changes for females at RDX 30 mg/kg/day and TNT 125 mg/kg/day were -29% and +16%, respectively, whereas female rats receiving TNT 125/RDX 30 mg/kg/day had values similar to controls.

Dose-dependent elevations of serum cholesterol levels were seen in TNT- but not RDX-treated rats. At 25 mg/kg/day of TNT, cholesterol values for both sexes were slightly greater than for control animals, but were not statistically significant. For each sex, similar values were observed for rats administered either TNT 125 mg/kg/day or TNT 125/RDX 30 mg/kg/day, but values were significantly lower at the TNT 125/RDX 100 mg/kg/day dose level suggesting a possible antagonistic effect of RDX on TNT-induced hypercholesterolemia (Tables 15 and 16).

1. Organ Weights

Dose-related hepatomegaly was observed for TNT-treated animals and to a lesser extent for RDX-treated females. Statistically significant elevations occurred at 125 and 300 mg/kg/day of TNT, and at the RDX 100 mg/kg/day dose level for females. Rats receiving combinations of TNT and RDX demonstrated elevations in relative liver weights which, compared on percent increase, appeared to be due to the independent actions of the two test articles, i.e., the effects were additive. Absolute and relative splenic weights were significantly increased following 125 or 300 mg/kg/day of TNT but not by RDX treatment. RDX, however, appeared to partially antagonize TNT-induced splenomegaly.

Testicular atrophy was observed at TNT 300 mg/kg/day and to a lesser extent at the TNT 125 mg/kg/day dose level. The co-administration of RDX significantly antagonized this phenomenon. A slight but dose-related increase in relative kidney weights was seen for TNT- but not RDX-treated animals. Following their co-administration, RDX failed to alter this effect of TNT.

Elevated relative but not absolute brain weights were observed for those treatment groups which demonstrated depressed body weight gains. By contrast, absolute heart weights were slightly decreased for some of the rats administered either TNT and/or RDX, but were similar to control values when corrected for body weight. Similar results have been previously obtained under conditions of experimental food deprivation resulting in reductions in body weight gain (2, 3) (Tables 17-20).

J. Pathology

The Pathology Report is contained in Appendix X. Brain lesions which consisted of focal vacuolation and/or malacia of the white tracts of the cerebellar folia were observed for six males and three females at the highest TNT dose level (TNT 300 mg/kg/day). One female having these lesions died spontaneously. The vacuolar lesions consisted of small oval empty spaces of minimal severity and were observed in 2 animals per sex. The leukomalacia appeared to consist of demyelination that appeared to be a progression of the vacuolar lesions. They were manifested by aggregation of lipid-laden macrophages in the immediate vicinity of the vacuoles. Neither RDX alone nor in combination with TNT produced any histological changes in the brain. Injected blood vessels and/or blood clots of the brain, however, were noticed at gross necropsy for some animals receiving RDX 100 or 300 mg/kg/day, TNT 5/RDX 300 mg/kg/day, or TNT 125/RDX 100 mg/kg/day.

Multifocal hepatocellular hypertrophy (hepatocytomegaly) of minimal severity was found in six males at TNT 125 mg/kg/day, one male at TNT 125/RDX 30 mg/kg/day, five females at TNT 125/RDX 100 mg/kg/day and one female at TNT 125/RDX 300 mg/kg/day. The lesions were manifested as an increase in cytoplasmic mass of hepatocytes located in the centrilobular to midzonal regions of affected lobules. Diffuse hepatocytomegaly of minimal to mild severity

was seen in all ten males, and either multifocal or diffuse hepatocytomegaly of minimal severity was seen in eight of the females given 300 mg/kg/day of TNT. In addition, there was an increase in the relative numbers of sinusoidal brown pigment-laden macrophages in one animal of each sex at this dose. These animals also showed more severe hepatocytomegaly than the other rats in this treatment group. These pigment-laden macrophages were also seen in one female receiving TNT 125/RDX 100 mg/kg/day. Minimal focal bile duct proliferation was observed in one male and six females at the TNT 300 mg/kg/day dose level.

An increase of yellowish brown pigment resembling lipofuscin was seen in the tubular epithelial cell cytoplasm in the renal cortices for most of the rats receiving 125 mg/kg/day of TNT, most of the females administered TNT 125 mg/kg/day in combination with RDX 30 or 100 mg/kg/day, and one male at the TNT 125/RDX 100 mg/kg/day dose level. Similar, but more severe and diffuse lesions were observed for all animals administered 300 mg/kg/day of TNT.

Splenomegaly was observed at gross necropsy for some of the animals receiving 125 or 300 mg/kg/day of TNT. Upon microscopic examination, mild diffuse, sinusoidal congestion was seen for one male at TNT 25 mg/kg/day, one male and four females at TNT 125 mg/kg/day, nine males and all females at TNT 300 mg/kg/day (mild to moderate severity), and two males at the TNT 125/RDX 30 mg/kg/day dose level. In addition, a minimal (females) to mild (males) increase of hemosiderin-like pigment was present in macrophages of the splenic red pulp for rats administered 300 mg/kg/day of TNT. A mild increase of this pigment was also seen for eight males at TNT 125/RDX 30 mg/kg/day.

Small testes were apparent at gross necropsy for nine males receiving 300 mg/kg/day of TNT. Histologic examination revealed dose-related degeneration of the germinal epithelium lining the seminiferous tubules of TNT-treated males. Lesions were observed in one, six and ten males at TNT 25 mg/kg/day, 125 mg/kg/day and 300 mg/kg/day, respectively. The testicular lesions at the TNT 300 mg/kg/day dose level were diffuse, bilateral and marked in severity. Histologically, those lesions graded as minimal to mild were characterized by a diminution of spermatozoa, spermatids, and spermatocytes as a result of degeneration and necrosis. Spermatocytic and spermatidic giant cells were also present in the lumen of some affected tubules and appeared to represent an early degenerative stage of this lesion. Lesions of moderate severity consisted of an absence of spermatozoa and spermatids, and only a few spermatocytes remained in the degenerative tubule. The Sertoli cells and spermatogonia appeared to be unaffected. Lesions graded as marked in severity consisted of atrophic seminiferous tubules lined with a few Sertoli cells and spermatogonia. Diffuse intertubular edema was also observed in the testes of these animals. In addition to the above lesions, there was mild to moderate diffuse hyperplasia of interstitial (Leydig) cells in both testes of all males at the highest TNT dose (TNT 300 mg/kg/day).

Multifocal degenerative testicular lesions which were minimal to mild in severity were observed for single non-surviving males receiving 300 or 600 mg/kg/day of RDX. Bilateral, diffuse, marked hypospermatogenesis accompanied by mild, focal degeneration of the germinal epithelium was present in the testes of two non-surviving males receiving TNT 125/RDX 300 mg/kg/day. Since all of these animals died 2-3 weeks after initiation of treatment, the testicular lesions may have been a secondary response to general debilitation (4), however, a direct effect of TNT for the latter two animals cannot be ruled out.

Small thin uteri were observed at gross necropsy for a few females receiving either TNT 300 mg/kg/day, RDX 100 mg/kg/day, TNT 125/RDX 30 mg/kg/day, or TNT 125/RDX 100 mg/kg/day. Microscopic examination, however, failed to detect treatment-related lesions. Hypoplastic uteri have previously been observed at the microscopic level for animals receiving TNT/RDX combinations (5).

There were no other gross or histopathologic lesions which appeared to be associated with TNT, RDX or TNT/RDX treatment. Nontreatment-related lesions seen were regarded as incidental findings ascribed to naturally occurring diseases and have been previously reported as spontaneous lesions in F344 rats (6-8) (Table 21).

IV. DISCUSSION

Mortality was observed for RDX-treated animals receiving 100 mg/kg/day or greater, whereas a lethal dose of TNT was not apparent. For animals exposed to lethal doses of RDX, hyperreactivity to approach, tremors and/or convulsions were observed. Some of these animals demonstrated injected blood vessels and/or clotted blood on the brain at necropsy, however, histopathologic lesions were not in evidence. In contrast to animals treated with RDX, animals administered either 125 or 300 mg/kg/day of TNT showed histologic lesions (vacuolation and/or leukomalacia of the white tract of the cerebellar folia) in the absence of clinical signs of toxicity. Only two deaths occurred in animals treated with TNT alone. One male and one female at the 300 mg/kg/day dose level died within 48 hrs after blood sample collection in Test Week 13. This suggested that the added stress of blood volume reduction in animals that were already anemic may have been responsible for these two deaths although one of these animals also demonstrated cerebellar vacuolation. On the basis of lethality, TNT appeared to protect animals against RDX-induced death. Rats receiving TNT 125/RDX 100 mg/kg/day had a lower incidence of mortality and increased mean survival time when compared with animals administered the corresponding dose of RDX alone.

Dose-related reductions in body weight gains and food consumption were seen for TNT-treated males and to a lesser extent for females. Although 100 mg/kg/day of RDX proved lethal for eight of ten males and five of ten females, body weight gains and food consumption of these animals were less affected than those of rats receiving the highest dose of TNT. With combined TNT and RDX treatments, in contrast to the protective effect seen for lethality, the percent changes in body weight and food consumption were basically additive.

Slight but statistically significant increases in renal weights were seen for TNT-treated rats. Upon histologic examination, the only change observed was a yellowish-brown pigment resembling lipofuscin in the tubular epithelial cells of the renal cortices for most animals receiving either 125 or 300 mg/kg/day of TNT, and for most of the females administered TNT 125 mg/kg/day in combination with either 30 or 100 mg/kg/day of RDX.

Dose-related anemia was observed for TNT-treated animals with males appearing to be slightly more sensitive. Statistically significant reductions in erythrocytes, hematocrit and hemoglobin were seen for both sexes administered 125 or 300 mg/kg/day of TNT. These parameters were also reduced for both sexes at TNT 25 mg/kg/day, but they were only statistically significant for males. Physiologic compensatory responses to the anemic state included reticulocytosis, macrocytosis and increased numbers of nucleated erythrocytes. Slight methemoglobinemia was also observed at the TNT 300 mg/kg/day dose level. Except for a slight leukocytosis, RDX failed to alter hematologic parameters or modify TNT-induced anemia when the two test articles were jointly administered. A hemosiderin-like pigment in macrophages of the splenic red pulp and liver, and sinusoidal congestion of the splenic red pulp were observed upon microscopic examination of animals receiving either 125 or 300 mg/kg/day of TNT. In addition, dose-related elevations of absolute and relative splenic weights were seen for TNT-treated rats. These observations suggest that TNT-induced anemia was hemolytic in origin. Methemoglobin production indicative of the oxidizing nature of TNT and/or its metabolite(s) and the lack of bone marrow cytotoxicity upon microscopic examination support this concept. Although RDX alone failed to affect splenic weights, it did appear to partially antagonize TNT-induced splenomegaly.

Dose-related decreases in serum triglyceride levels were seen for RDX-treated animals. By contrast, TNT may or may not have slightly increased this parameter although a dose-response relationship was not established. TNT did, however, appear to partially oppose RDX-induced hypotriglyceridemia. Reductions in serum triglyceride levels have previously been observed in rats treated with hepatotoxic chemicals which induce fatty infiltration of the liver (9). The mechanism for this effect appears to be associated with a block of the secretion of hepatic triglyceride into plasma (10,11). Although slight hepatomegaly was apparent at the RDX 100 mg/kg/day dose level, microscopic lesions of the liver, including hepatocellular vacuolation suggestive of fatty infiltration, were not observed. Lipid-specific stains, however, were not used nor were hepatic triglyceride levels measured. Hepatomegaly with accompanying hepatocytomegaly was seen for TNT-treated rats. This occurred at 125 mg/kg/day of TNT or greater, irrespective of the joint administration of RDX. Combinations of the test articles resulted in additive hepatomegaly.

Treatment of rats with TNT induced dose-related elevations of serum cholesterol levels. RDX failed to affect serum cholesterol levels, but did antagonize TNT induced-hypercholesterolemia. Previously reported studies have demonstrated that inducers of liver microsomal mixed function oxidases (MFOs) such as phenobarbital, DDT, butylated hydroxytoluene, polychlorinated biphenyls (PCBs) and polybrominated biphenyls (PBBs), cause hepatomegaly/hepatocytomegaly and significantly elevate serum cholesterol levels, presumably by stimulating hepatic cholesterolgenesis as steroids are endogenous

substrates for this group of enzymes (12-16). Mechanistically, PCBs have been shown to increase the activity of the rate limiting enzyme for cholesterol synthesis in the liver and to also increase the rate of *in vivo* cholesterolgenesis as measured by incorporation of tritiated water (17). Liver microsomal MFO activity has been shown to be elevated in rats following the dietary administration of 0.15% TNT for 3 weeks (5). Thus, TNT-induced hypercholesterolemia and hepatomegaly with accompanying hepatocellular hypertrophy is consistent with induction of MFO activity.

Testicular atrophy was observed for rats treated with 300 mg/kg/day of TNT and to a lesser extent for those treated with 125 mg/kg/day. Histopathologic examination revealed dose-dependent degeneration of the germinal epithelium of the seminiferous tubules with little or no mature spermatozoa present. At the TNT 300 mg/kg/day dose level, hyperplasia of the interstitial cells of Leydig was also observed, which may have been a compensatory response to aspermatogenesis. Although six of ten rats administered 125 mg/kg/day of TNT showed degenerative lesions of the germinal epithelium, this was not seen in animals receiving this dose of TNT concurrently with RDX. Slight hypospertogenesis was seen for two rats at the TNT 125/RDX 300 mg/kg/day dose level. As these animals died within a few weeks after initiation of treatment, this lesion may have been a secondary response to general debilitation (4). Testicular lesions were not observed for rats given either TNT 125/RDX 30 mg/kg/day or TNT 125/RDX 100 mg/kg/day.

The administration of MFO inducers to laboratory animals has been shown to cause testicular atrophy with accompanying degenerative lesions (18, 19). Conney and coworkers demonstrated an increase in the oxidative metabolism of testosterone to less androgenic hydroxy derivatives in liver microsomes isolated from phenobarbital-treated rats (20). Phenobarbital has also been shown to reduce serum progesterone levels in female rats presumably by a similar mechanism of MFO induction (21). Hook and coworkers recently demonstrated that other MFO inducers such as PBBs increased the oxidative metabolism of testosterone *in vitro* and decreased its *in vitro* reduction to the more biologically active androgens, dihydrotestosterone and dihydroandrosterone (22). Similar mechanisms involving induction of MFO activity may also be responsible for TNT-induced testicular atrophy. The accompanying hyperplastic response of the interstitial cells of Leydig, which secrete testosterone and are indirectly sensitive to alterations in serum testosterone levels, is consistent with this hypothesis. Most chemicals which appear to induce degeneration of testicular germinal epithelium by a direct effect seldom alter interstitial cells (4), suggesting that TNT-induced testicular damage was secondary to altered androgen metabolism.

The apparent TNT-mediated induction of MFO activity may have been responsible for its antagonistic effect on RDX intoxication. Studies by Bradley have strongly implicated liver microsomal MFOs in the metabolism of RDX (23). For example, pretreatment of rats with phenobarbital, an MFO inducer, increased whereas pyrazole, and MFO inhibitor, decreased the metabolism of RDX. Although studies at SRI International suggested a slight MFO inductive effect of RDX (4), pretreatment of rats with RDX failed to alter either pentobarbital sleeping or zoxazolamine paralysis times (23).

Thus, it appears that RDX is metabolized by microsomal MFOs but does not significantly induce their activity. The co-administration of the MFO inducer TNT with RDX in the present study may have therefore increased the rate of MFO-mediated detoxification of the latter. This is consistent with TNT's antagonistic effect on RDX-induced hypotriglyceridemia, leukocytosis, and mortality.

Since RDX does not appear to significantly induce MFOs, although it is itself apparently a substrate for these enzymes, it may have inhibited the binding of TNT to MFOs, thus reducing TNT's inductive effect on the activity of these enzyme systems. Alternatively, the slight MFO inductive effect by RDX suggested from *in vitro* assays at SRI International may have increased the rate of MFO-mediated detoxification of TNT, or RDX may have altered the disposition of TNT resulting in an increased rate of excretion. In any event, these mechanisms would be predicted to result in a reversal of TNT toxicity dependent on MFO induction and are consistent with RDX antagonism of TNT-induced hypercholesterolemia, hepatocellular hypertrophy in males and testicular atrophy. It should be noted that the effects of the co-administration of TNT and RDX on their gastrointestinal absorption were not measured in the present study.

A singular toxic effect of TNT which RDX failed to alter was anemia. Previous studies by Reddy and coworkers on methemoglobin production in rats following the oral administration of nitrobenzene suggested that nitroreductases in the intestinal microflora and not the liver were apparently responsible for the reductive metabolism of nitrobenzene to a reactive metabolite presumably an N-hydroxy derivative (24). In addition, Dent and coworkers have demonstrated that 2,4-dinitrotoluene is metabolized by rat intestinal microflora (25), and Edwards and associates have shown that TNT is an apparent direct acting mutagen towards *Salmonella* but is negative in the Ames test if the *Salmonella* are deficient in nitroreductase activity (26). Thus, intestinal bacterial nitroreductases appear to be involved in the metabolism of TNT to reactive metabolites, and if RDX does not affect the activity of these enzymes, it would not be expected to alter TNT-induced anemia as was observed in the present investigation. In light of this, an explanation for the antagonistic effect of RDX on TNT-induced splenomegaly with its accompanying histologic lesions is not readily apparent.

In summary, the major toxic effects following the dietary administration of TNT to rats included cerebellar lesions, hemolytic anemia, and hypercholesterolemia, and hepatomegaly, splenomegaly, and testicular atrophy with their accompanying histologic lesions. RDX intoxication in rats included hypotriglyceridemia, leukocytosis, behavioral changes, convulsions, and mortality. Most of the toxic effects of these chemicals were antagonized following their co-administration. The mechanisms of these toxic interactions appeared to be related, at least in part, to alterations in liver microsomal mixed function oxidase activity.

V. RECOMMENDATIONS

In addition to evaluating the subchronic toxicity of TNT, RDX and TNT/RDX combinations, this study was conducted to select dose levels for chronic toxicity/carcinogenicity studies. As described in the preceding Discussion Section, dose levels of 25 mg/kg/day of TNT or greater resulted in significant toxicity. At the TNT 5 mg/kg/day dose level, a slight reduction in body weight gain, approximately 10%, was apparent for males but not females throughout the treatment period. Males administered 25 mg/kg/day of TNT, however, demonstrated little or no decrease in body weight gain during the early phase of the exposure period, but had an approximate 10% reduction in body weight gain by Test Week 13. Examination of the body weight gain dose-response curves suggested that the results for males receiving 5 mg/kg/day of TNT may have been anomalous as males given 25 mg/kg/day were, in general, more resistant to body weight changes, and females receiving 5 or 25 mg/kg/day of TNT were unaffected. In any event, the maximum tolerated dose (MTD) for TNT, as defined by the National Cancer Institute for carcinogen testing (27), under the experimental conditions described herein, appears to be between 5 and 25 mg/kg/day. Since anemia was seen for both sexes at the latter dose, the MTD is probably slightly less than this dose.

The most sensitive indicators of RDX intoxication were hypotriglyceridemia and to a lesser extent leukocytosis. Dose-dependent reductions in serum triglyceride levels were seen for both sexes. Although the results obtained at 10 mg/kg/day of RDX were statistically insignificant, examination of the dose-response curves suggested biological significance. Reductions of approximately 10% and 14% for males and females, respectively, were observed at this dose, and both dose-response curves intercepted their respective control group values at approximately 5-6 mg/kg/day. Since slight but statistically significant leukocytosis for females but not males was seen at 10 mg/kg/day of RDX, it appears that the MTD is probably slightly less than this dose.

Recent EPA proposed toxicity testing guidelines to support the Toxic Substances Control Act suggest the use of four dose levels in combined chronic toxicity/carcinogenicity studies in rats (28). On the basis of the above discussion, the following doses are recommended to achieve significant toxicologic effects at the highest dose level, an apparent no observable effect level at the lowest dose, and marginal or no toxicity at the intermediate dose levels.

Treatment Group	RDX (mg/kg/day)	TNT (mg/kg/day)
I	0.0	0.0
II	0.3	0.4
III	1.5	2.0
IV	8.0	10.0
V	40.0	50.0

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TABLES

IIT RESEARCH INSTITUTE

TABLE 1

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RATMEAN/SD ACTUAL DOSES OF TNT AND RDX RECEIVED BY MALES (MG/KG/DAY)^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	-	-	-	-	-	5	5	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
TEST WEEK																
1 TNT		1.0 .1	4.9 .5	25.1 2.7	115.6 6.4	162.3 13.2						4.5 .4	4.4 .3	106.5 5.4	82.2 8.5	56.0 19.6
RDX							10.9 1.2	27.9 2.3	70.3 7.7	107.7 10.7	101.3 22.0	26.9 2.2	20.5 2.1	25.5 1.3	65.8 6.0	134.3 47.1
2 TNT		.9 .1	4.8 .6	24.9 3.4	106.6 6.4	309.9 25.0						4.4 .4	2.3 .3	117.7 30.2	111.3 17.6	87.9 16.2(9)
RDX							9.2 .9	28.0 2.7	84.5 7.3	224.0 16.0	*****	26.1 2.4	122.0 14.7	28.2 7.2	89.0 14.1	210.9 38.9
3 TNT		.9 .1	4.9 .6	23.8 2.4	137.3 9.0	500.5 82.4						5.1 .5	4.9 2.1(5)	142.1 32.9	143.8 15.6	234.5 1.0(11)
RDX							9.6 .8	32.4 8.4	109.5 20.5	*****	*****	30.7 3.0	295.2 123.0	34.1 7.9	115.0 12.4	562.8 1.0
4 TNT		1.0 .1	4.9 .6	25.1 2.5	119.6 6.7	257.3 23.6						4.7 .4	5.7 1.9(5)	121.1 9.3	113.1 10.9	*****
RDX							9.8 .8	28.2 2.9	98.7 7.8	*****	*****	28.4 2.3	343.4 111.3	29.0 2.2	90.5 8.8	*****
5 TNT		.9 .1	4.8 .6	24.8 2.6	118.6 5.4	262.5 28.6						4.9 1.2	*****	106.2 6.6	125.3 10.6	*****
RDX							9.9 1.0	29.1 2.5	99.3 7.3(9)	*****	*****	29.2 7.4	*****	25.6 1.6	100.5 8.5	*****
6 TNT		1.0 .1	4.9 .7	21.8 2.2	112.9 7.3	253.0 23.9						4.4 .4	*****	121.2 9.6	14.2 8.8	*****
RDX							9.4 .7	27.6 2.7	85.9 6.3(8)	*****	*****	26.6 2.5	*****	29.1 2.3	91.3 7.0	*****
7 TNT		1.0 .1	5.1 .6	23.6 1.5	120.2 10.4	310.6 50.6						5.6 .5	*****	135.0 12.1	130.0 8.5	*****
RDX							10.6 .8	31.2 2.8	107.9 11.1(8)	*****	*****	33.4 2.9	*****	32.4 2.9	104.0 6.0	*****
8 TNT		1.0 .0	4.8 .5	24.1 2.3	114.4 10.2	294.0 37.0						4.8 .4	*****	112.5 10.1	124.4 14.5	*****
RDX							9.3 .7	31.0 2.9	92.5 8.2(7)	*****	*****	29.0 2.3	*****	27.0 2.4	99.5 11.6	*****
9 TNT		.9 .0	4.6 .6	24.5 2.5	111.8 6.5	257.0 25.5						4.5 .4	*****	117.8 7.1	118.6 14.0	*****
RDX							9.2 .6	28.7 2.5	89.7 6.1(5)	*****	*****	27.3 2.5	*****	28.3 1.7	94.9 11.2	*****
10 TNT		.9 .1	4.9 .6	24.9 2.1	130.8 10.2	290.3 34.2						4.8 .5	*****	142.9 25.2	128.7 13.3	*****
RDX							10.5 .8	30.5 2.6	104.6 7.5(6)	*****	*****	29.1 3.3	*****	34.3 6.0	103.0 10.6	*****
11 TNT		1.0 .1	5.0 .5	24.0 2.4	125.6 9.4	311.7 42.4						5.0 .5	*****	119.7 6.8	132.1 16.1(9)	*****
RDX							10.0 .7	29.7 2.6	102.2 16.8(3)	*****	*****	29.9 3.2	*****	28.7 1.6	105.7 12.9	*****
12 TNT		1.0 .0	5.2 .7	25.6 2.4	127.5 9.4	280.9 27.0						5.0 .7	*****	123.8 8.8	129.5 23.2(9)	*****
RDX							9.9 .6	30.2 2.8	119.1 15.0(2)	*****	*****	34.5 4.0	*****	29.7 2.1	103.6 10.5	*****
13 TNT		1.1 .1	5.9 .9	29.1 3.5	130.1 10.7	330.2 41.0						5.8 1.0	*****	146.7 25.9	125.2 14.7(9)	*****
RDX							10.2 .8	33.3 5.1	112.2 4.8(2)	*****	*****	35.0 6.2	*****	35.2 6.2	100.2 11.8	*****
OVERALL MEAN/SD FOR 13 WEEKS																
TNT		1.0 .1	5.0 .7	24.8 2.9	120.8 11.8	295.1 82.0						4.9 .8	3.9 1.6	124.1 21.1	121.2 19.6	79.2 43.4
RDX							9.9 .9	29.8 3.9	95.0 16.1	151.3 60.7	101.3 22.0	29.7 4.6	143.2 130.4	29.8 5.1	97.0 15.7	190.2 104.1

A STRING OF ***** INDICATES NO DATA

^a N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.

TABLE 2

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RATMEAN/SD ACTUAL DOSES OF TNT AND RDX RECEIVED BY FEMALES (MG/KG/DAY)¹

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	10	30	100	300	600	30	300	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	125	100	300
TEST WEEK																
1 TNT		.9 .1	4.9 .4	24.6 2.4	123.3 10.6	254.6 54.9						5.8 .4	2.1 .4	116.4 6.0	84.7 26.0	65.8 18.6
RDX							10.7 .5	28.6 1.6	70.2 4.0	123.1 44.2	125.7 22.7	30.5 2.6	123.8 22.6	27.9 1.6	67.7 21.5	155.7 44.6
2 TNT		1.1 .8	5.7 .4	25.8 1.2	131.5 9.3	228.9 19.5						5.1 .5	4.0 .8(5)	137.6 8.3	140.5 22.3	184.9 27.3(5)
RDX							10.5 .6	29.4 1.4	94.6 5.7	213.9 35.2(2)	*****	30.6 2.7	285.4 50.4	33.0 2.0	112.5 17.9	251.0 65.4
3 TNT		.9 .1	4.7 .2	23.4 2.1	105.5 9.0	342.9 19.7						4.9 .5	8.8 .8(1)	112.6 7.6	136.4 6.3	236.8 161.8
RDX							9.1 .6	30.2 1.7	116.1 5.3	*****	*****	29.3 2.9	482.5 .8	27.9 1.8	109.1 5.1	568.3 308.2
4 TNT		.9 .8	1.6 .3	24.1 3.4	104.8 8.6	232.9 17.3						4.4 .4	*****	93.0 7.1	126.6 6.0	*****
RDX							8.9 .6	27.5 1.5	91.9 6.1	*****	*****	26.2 2.2	*****	22.4 1.7	85.1 5.5	*****
5 TNT		1.0 .1	5.1 .3	25.6 1.1	123.6 10.8	293.5 21.3						5.3 .4	*****	140.1 9.7	142.8 6.2	*****
RDX							10.6 .7	31.3 2.5	109.2 4.7(4)	*****	*****	32.0 2.6	*****	51.7 2.2	114.3 5.0	*****
6 TNT		.9 .1	4.8 .3	23.8 1.2	123.5 8.9	275.2 23.3						4.9 .4	*****	126.9 8.6	110.5 4.8	*****
RDX							10.1 .6	27.1 1.7	97.5 5.6(9)	*****	*****	29.5 2.4	*****	30.2 2.1	88.4 3.9	*****
7 TNT		.8 .1	4.2 .3	20.5 .8	103.5 8.3	251.1 16.2						4.4 .4	*****	113.3 9.6	112.3 11.5	*****
RDX							8.7 .5	25.7 1.5	89.9 8.7(8)	*****	*****	26.6 2.2	*****	27.2 2.3	89.9 9.2	*****
8 TNT		1.0 .1	4.8 .3	26.1 1.6	118.1 11.1	321.9 24.5						5.8 .4	*****	118.9 8.1	127.6 7.4	*****
RDX							10.0 .7	29.7 2.0	98.1 5.8(7)	*****	*****	30.3 2.4	*****	28.6 2.0	102.1 5.9	*****
9 TNT		.9 .8	5.2 .4	25.6 1.2	126.8 9.0	286.8 13.4						5.8 .3	*****	125.2 9.8	131.5 9.7	*****
RDX							9.6 .5	30.5 1.8	101.8 14.7(7)	*****	*****	29.8 1.9	*****	37.0 2.3	105.2 7.8	*****
10 TNT		1.0 .1	5.0 .3	23.8 1.3	121.7 9.0	292.7 24.7						5.2 .4	*****	135.9 6.1	135.1 9.8	*****
RDX							10.5 .7	32.8 4.1	99.1 9.2(5)	*****	*****	32.8 2.8	*****	32.6 1.5	103.1 7.9	*****
11 TNT		1.1 .0	5.8 .3	26.0 1.3	139.1 9.5	295.5 15.1						5.2 .4	*****	134.6 7.2	126.9 14.2	*****
RDX							9.8 .5	30.8 1.8	85.4 10.4(5)	*****	*****	31.1 2.4	*****	32.4 1.7	101.5 11.4	*****
12 TNT		.9 .8	4.9 .4	23.4 1.7	125.2 7.7	326.8 24.7						5.8 .4	*****	121.5 9.2	140.3 15.6(9)	*****
RDX							9.7 .5	29.5 3.0	102.6 12.8(5)	*****	*****	29.8 2.2	*****	29.2 2.2	112.2 12.5	*****
13 TNT		.9 .1	4.8 .8	24.8 4.6	100.4 16.8	286.8 26.1						4.9 .5	*****	120.3 26.4	134.2 29.3(9)	*****
RDX							9.4 .9	32.3 2.3	121.6 10.8(5)	*****	*****	29.3 3.1	*****	31.8 6.3	107.3 23.5	*****

OVERALL MEAN/SD FOR 13 WEEKS

TNT	1.0 .1	4.9 .5	24.4 2.5	119.7 14.3	290.6 39.9							5.0 .5	3.3 1.9	123.4 16.2	125.2 21.8	97.8 71.5
RDX							9.8 .9	29.6 2.8	97.5 15.6	138.2 54.4	125.7 22.7	29.8 2.9	196.7 112.2	29.5 3.9	100.1 17.5	232.5 171.8

A STRING OF ***** INDICATES NO DATA

¹ N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.

TABLE 3
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT)
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) and TNT/RDX MIXTURES IN THE FISCHER RAT
L6116/L6121, STUDY NO. 1

PREMIX STABILITY ANALYSIS

Analytical Data Stability of Premix 838-17 10% RDX in Premix			Analytical Data Stability of Premix 838-15 10% TNT in Premix		
Date Extracted	$\bar{X} + S.D. (N=5)\%$	Ranges %	Date Extracted	$\bar{X} + S.D. (N=5)\%$	Ranges %
11/11/79	9.56 \pm 0.19	9.32 - 9.77	11/10/79	10.16 \pm 0.16	9.92 - 10.34
11/25/79	9.49 \pm 0.31	9.04 - 9.80	11/25/79	10.49 \pm 0.31	9.99 - 10.78
11/29/79	9.76 \pm 0.28	9.42 - 10.09	11/29/79	10.06 \pm 0.10	9.92 - 10.16
12/09/79	9.75 \pm 0.24	9.40 - 10.05	12/07/79	10.14 \pm 0.15	9.91 - 10.29
12/13/79	9.61 \pm 0.11	9.42 - 9.69	12/13/79	10.17 \pm 0.15	9.91 - 10.29
12/19/79	9.94 \pm 0.18	9.68 - 10.12	12/19/79	10.45 \pm 0.15	10.27 - 10.60
12/27/79	9.70 \pm 0.12	9.53 - 9.82	12/27/79	10.57 \pm 0.13	10.42 - 10.76

TABLE 4
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT)
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
Premix and Diet Analyses

Date Prepared	Date of Extraction	Lot No.	% TNT	% RDX
11/07/79	11/10/79	835-15	10.16 \pm 0.16	---
11/08/79	11/11/79	838-17	---	9.56 \pm 0.19
12/04/79	12/06/79	838-22.0	10.26 \pm 0.10	---
12/05/79	12/07/79	838-24.0	---	9.84 \pm 0.31
1/03/80	1/09/80	838-25.0	10.34 \pm 0.24	---
1/03/80	1/9-10/80	135-1	---	9.33 \pm 0.34
2/06/80	2/06/80	135-2	---	9.92 \pm 0.21
2/05/80	2/08/80	134-2	10.42 \pm 0.22	---

INTENDED %		DIET ANALYSES ¹		ANALYSIS II (1 week lag) % TNT + S.D. % RDX + S.D.	
TNT	RDX	% TNT + S.D.	% RDX + S.D.	% TNT + S.D.	% RDX + S.D.
0.0009	---	0.0010 \pm 0.0001	---	0.0008 \pm 0.0001	---
---	0.0096	---	0.0086 \pm 0.0003	---	0.0092 \pm 0.0005
0.0046	0.0275	0.0045 \pm 0.0002	0.0271 \pm 0.0009	0.0042 \pm 0.0003	0.0270 \pm 0.0014

¹ Not corrected for recoveries. TNT and RDX recoveries were 107.8% and 110.0%, respectively.

TABLE 5
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT)
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX AND TNT/RDX MIXTURES IN THE FISCHER RAT
MORTALITY OF MALE RATS

Test Article(s)	Dose(s) mg/kg/day	Number of Surviving Animals/Test Week												Mean Survival Time* (Test Week)
		1	2	3	4	5	6	7	8	9	10	11	12	13
Controls	0	30	30	30	30	30	30	30	30	30	30	30	30	14.0
TNT	1	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT	5	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT	25	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT	125	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT	300	10	10	10	10	10	10	10	10	10	10	10	10	13.9
RDX	10	10	10	10	10	10	10	10	10	10	10	10	10	14.0
RDX	30	10	10	10	10	10	10	10	10	10	10	10	10	14.0
RDX	100	10	10	10	9	8	8	8	5	4	3	3	2	9.5
RDX	300	6	6	0										2.5
RDX	600	0												1.5
TNT/RDX	5/30	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT/RDX	5/300	10	8	5	1	0								3.7/2.8**
TNT/RDX	125/30	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT/RDX	125/100	10	10	10	10	10	10	10	10	10	9	9	8	13.7
TNT/RDX	125/300	10	6	2	0									3.2

* Mean Survival Times were calculated on the basis of Test Day survival.

** Value based on the omission of Test Week One data. During Test Week One animals were inadvertently fed TNT 5/RDX30.

L6116/L6121, STUDY NO. 1

TABLE 6

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
MORTALITY OF FEMALE RATS

Test Article(s)	Dose(s) mg/kg/day	Number of Surviving Animals/ Test Week												Mean Survival Time* 13 (Test Week)
		1	2	3	4	5	6	7	8	9	10	11	12	
Controls	0	30	30	30	30	30	30	30	30	30	30	30	30	14.0
TNT	1	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT	5	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT	25	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT	125	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT	300	10	10	10	10	10	10	10	10	10	10	10	10	14.0
RDX	10	10	10	10	10	10	10	10	10	10	10	10	10	13.9
RDX	30	10	10	10	10	10	10	10	10	10	10	10	10	13.9
RDX	100	10	10	10	10	10	10	10	10	10	10	10	10	14.0
RDX	300	7	1	0	10	9	8	7	7	5	5	5	5	10.9
RDX	600	1	0											2.1
TNT/RDX	5/30	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT/RDX	5/300	8	3	0										2.4
TNT/RDX	125/30	10	10	10	10	10	10	10	10	10	10	10	10	14.0
TNT/RDX	125/100	10	10	10	10	10	10	10	10	10	10	10	10	13.8
TNT/RDX	125/300	10	3	0										2.1

* Mean Survival Times were calculated on the basis of Test Day survival.

TABLE 7

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST WEEK	MEAN/SD BODY WEIGHT VALUES FOR MALES (G) ^a															
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
-1	117.6 11.66	119.6 10.37	117.4 12.83	118.9 13.84	121.9 6.84	121.2 8.08	114.7 11.65	116.3 11.14	118.6 9.82	114.3 9.92	116.6 11.14	118.7 13.93	117.8 14.44	118.4 9.25	116.1 14.42	117.3 11.22
1	147.2 14.54	142.4* 11.56	139.8* 16.71	145.4 16.08	148.3* 8.50	134.7* 9.90	137.7* 15.54	138.9* 14.19	138.3* 13.87	132.8* 11.06	128.8* 13.05	140.1* 18.14	142.2* 16.97	136.8* 11.91	137.0* 15.41	130.6* 13.46
2	171.9 17.00	165.7* 14.69	161.3* 19.11	170.4 19.35	162.4* 11.62	138.2* 11.33	159.0* 17.17	156.1* 17.52	145.3* 15.09	124.2* 6.27	*****	157.8* 18.77	150.4* 17.75	149.8* 13.16	140.8* 13.93	121.4* 6.77
3	195.8 18.20	188.7 18.69	184.0* 21.85	193.7 20.23	181.2* 14.30	149.8* 14.00	183.9 17.85	176.9* 20.84	160.8* 16.16	*****	*****	177.1* 23.57	140.4* 16.29(5)	162.1* 14.55	147.8* 13.71	119.6* 8.75(4)
4	216.9 19.62	212.1 17.27	204.0 24.73	213.8 21.64	201.6* 16.13	169.4* 16.85	204.6 19.20	194.8* 22.19	173.4* 16.73	*****	*****	194.7* 21.49	147.0* 8.19(3)	172.4* 17.08	157.7* 15.81	*****
5	227.2 18.72	225.0 13.03	217.1 23.75	227.6 23.36	210.8* 15.38	179.2* 20.09	214.8 16.75	205.7* 24.89	179.4* 16.67(3)	*****	*****	196.4* 34.27	*****	181.4* 15.85	161.4* 15.48	*****
6	240.6 20.70	243.5 11.70	232.1 23.89	247.1 21.74	227.1* 17.65	193.9* 22.27	237.5 18.79	225.9* 24.32	191.9* 16.55(6)	*****	*****	216.2* 25.84	*****	169.2* 15.52	179.2* 17.49	*****
7	259.6 21.15	251.6 12.04	243.6 24.46	250.4 21.02	231.7* 17.24	197.6* 22.17	249.4 19.60	234.9* 25.45	192.6* 18.29(6)	*****	*****	227.0* 22.44	*****	198.8* 17.00	176.6* 13.83	*****
8	267.7 21.90	261.1 11.52	251.5 25.28	258.7 22.46	235.7* 16.65	200.9* 21.14	259.2 18.78	243.7* 23.78	203.4* 23.73(9)	*****	*****	236.3* 21.33	*****	181.6* 14.39	151.6* 15.42	*****
9	277.3 21.31	273.7 11.33	260.2 26.28	269.2 24.55	245.7* 16.31	211.2* 21.80	265.1 18.13	254.6* 22.98	219.0* 26.95(5)	*****	*****	244.9* 21.04	*****	189.9* 14.43	189.9* 14.04	*****
10	286.5 22.35	281.9 10.54	269.3 26.11	275.0 23.88	251.7* 16.67	213.5* 21.35	278.3 20.44	263.0* 23.03	222.0* 35.19(4)	*****	*****	243.7* 26.74	*****	194.2* 14.16	151.6* 15.36	*****
11	294.7 23.15	291.3 10.21	278.8 27.71	285.9 25.38	261.1* 18.92	220.4* 22.19	289.1 21.34	272.0* 23.56	242.0* 44.14(3)	*****	*****	250.9* 31.78	*****	205.3* 13.92	205.3* 18.34(9)	*****
12	306.0 23.36	300.6 10.47	287.5 29.09	291.6 23.72	266.3* 18.71	227.0* 22.16	298.4 21.94	282.1* 23.98	255.5* 21.92(2)	*****	*****	259.0* 32.29	*****	216.6* 13.70	216.6* 18.70(9)	*****
13	301.6 23.17	296.0 12.44	283.5 26.01	285.5 28.13	261.9* 14.50	220.5* 26.73	292.1 23.97	276.1* 24.98	251.0* .00(2)	*****	*****	257.8* 26.06	*****	236.1* 15.95	217.7* 18.63(9)	*****

A STRING OF ***** INDICATES NO DATA

^a N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.
* Mean significantly different from control group mean, $p < 0.05$.

Statistical Analysis: One-way ANOVA on values relative to Test Week -1 values followed by Dunnett's t test.

TABLE 8

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MEAN/SD RELATIVE BODY WEIGHTS FOR MALES^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	-	-	-	-	-	5	5	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
TEST WEEK																
1	29.6 6.43	22.8* 5.07	22.4* 4.90	26.5 4.67	18.4* 3.10	13.5* 3.17	23.0* 5.16	22.6* 5.15	19.7* 5.77	18.5* 5.10	12.2* 3.94	21.4* 5.72	24.4 6.26	18.4* 4.93	20.9* 5.30	13.3* 3.80
2	54.3 9.25	46.1* 9.42	43.9* 7.96	51.5 6.95	40.5* 6.84	17.0* 5.12	44.3* 7.42	39.8* 8.93	26.7* 7.20	8.7* 5.61	***** *****	39.1* 6.40	32.6* 7.56	31.4* 7.09	24.7* 5.04	2.1* 4.59
3	78.2 11.34	69.1 14.59	65.6* 12.29	74.8 8.38	59.3* 9.81	28.6* 8.00	69.2 9.32	60.6* 13.24	42.2* 8.68	***** *****	***** *****	58.4* 7.88	22.2* 5.02	43.7* 9.84	31.7* 3.16	.8* 4.79
4	99.3 13.57	92.5 12.40	86.6 15.16	94.9 10.65	79.7* 12.47	48.2* 10.89	89.9 11.78	78.5* 15.65	54.8* 10.26	***** *****	***** *****	76.0* 8.65	28.3* 3.79	54.0* 12.44	41.6* 6.04	***** *****
5	109.6 13.27	105.4 11.16	99.7 14.72	108.7 13.66	88.9* 12.17	58.0* 14.24	100.1 9.33	89.4* 17.73	61.3* 10.75	***** *****	***** *****	77.7* 23.28	***** *****	63.0* 11.64	45.3* 5.77	***** *****
6	131.0 14.47	123.9 11.36	114.7* 15.12	124.2 11.89	105.2* 14.48	72.7* 16.11	122.2 11.89	109.6* 17.27	74.8* 11.29	***** *****	***** *****	97.5* 13.88	***** *****	76.7* 11.93	53.1* 10.45	***** *****
7	141.0 15.16	132.0 12.27	126.2 16.01	131.5 11.52	109.0* 13.89	76.4* 16.84	134.7 12.90	118.6* 17.80	75.5* 19.36	***** *****	***** *****	100.3* 9.39	***** *****	80.4* 12.28	60.5* 5.82	***** *****
8	150.1 15.54	141.5 12.48	134.1* 15.89	139.8 14.89	113.8* 13.53	79.7* 15.55	144.5 12.22	127.4* 16.41	85.0* 26.11	***** *****	***** *****	117.6* 8.51	***** *****	88.3* 12.53	65.5* 8.57	***** *****
9	159.7 15.25	154.1 13.14	142.2* 17.48	150.3 16.00	123.8* 13.87	90.0* 16.07	150.4 12.67	138.3* 15.78	104.6* 22.74	***** *****	***** *****	126.2* 8.51	***** *****	98.8* 13.04	73.8* 8.55	***** *****
10	168.9 16.19	162.3 11.94	151.9* 17.65	156.1 16.98	129.8* 14.57	92.3* 15.68	163.6 13.83	146.7* 15.83	107.8* 28.31	***** *****	***** *****	125.0* 15.80	***** *****	102.8* 13.13	78.1* 11.45	***** *****
11	177.1 17.58	171.7 12.82	161.4 18.48	167.0 17.84	139.2* 16.49	99.2* 16.80	174.4 15.76	156.3* 16.23	123.7* 41.55	***** *****	***** *****	132.2* 22.23	***** *****	112.9* 12.65	86.9* 15.23	***** *****
12	188.4 17.54	181.0 14.09	170.1* 20.28	172.7 16.57	144.4* 15.94	105.8* 16.77	183.7 16.43	165.8* 16.23	135.5* 21.92	***** *****	***** *****	140.3* 23.26	***** *****	121.2* 12.77	98.1* 14.54	***** *****
13	184.0 18.04	176.4 15.25	166.1 20.46	166.6 25.26	140.0* 14.38	99.3* 20.91	177.4 20.99	159.0* 19.09	131.0* 20.09	***** *****	***** *****	139.1* 18.54	***** *****	117.7* 15.59	99.2* 16.86	***** *****

A STRING OF ***** INDICATES NO DATA

^a N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.
* Mean significantly different from control group mean, p<0.05.

Statistical Analysis: One-way ANOVA followed by Dunnett's t test.

TABLE 9

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISHER RATMEAN/SD BODY WEIGHT VALUES FOR FEMALES (G)^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	-	-	-	-	-	5	5	30	125	300
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
TEST WEEK	-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-1	98.8 9.29	99.9 6.21	101.2 7.84	101.7 5.19	99.9 6.44	99.9 6.45	97.1 4.91	99.7 6.80	98.4 8.11	100.1 7.49	100.4 6.33	95.5 7.32	94.4 8.04	99.6 8.76	101.0 6.80	99.8 8.49
1	109.9 7.96	111.5 6.55	115.7 8.69	115.2 5.01	109.0 7.75	102.8 5.51	105.7 5.95	107.1 6.40	103.0 6.77	104.3 7.92	103.8 7.57	107.0 7.64	98.0 9.01	103.5 9.36	105.0 6.29	103.6 5.84
2	120.6 9.18	121.9 6.42	124.2 9.66	125.4 5.82	116.6 8.62	105.3 6.06	117.7 4.85	119.5 7.15	107.2 7.22	100.0 7.07	100.0 7.07	116.9 9.00	88.8 8.17	110.0 8.97	105.5 8.91	93.8 10.18
3	128.7 9.65	129.3 7.15	131.9 10.09	133.3 5.77	123.0 9.81	112.7 4.92	126.5 6.00	127.9 7.43	113.1 5.82	100.0 5.82	100.0 5.82	124.7 10.00	83.0 10.00	115.1 8.23	110.8 5.47	91.5 6.36
4	130.2 10.31	139.0 8.03	142.5 10.82	143.9 6.05	129.6 10.63	122.1 6.71	137.2 6.58	137.6 8.44	125.3 5.12	100.0 5.12	100.0 5.12	134.3 10.00	121.6 10.00	121.6 9.80	110.4 5.80	100.0 10.00
5	143.5 10.67	145.3 7.72	150.0 12.28	150.0 5.73	134.4 10.34	126.9 6.34	142.8 6.16	143.5 9.02	132.3 8.49	100.0 8.49	100.0 8.49	137.8 11.14	123.7 7.78	126.2 8.72	124.0 5.89	100.0 10.00
6	148.4 11.09	148.1 6.10	153.8 12.07	154.3 7.59	136.1 10.92	126.5 6.04	147.1 6.59	149.0 9.33	139.7 8.40	100.0 8.40	100.0 8.40	142.1 11.71	123.7 7.78	126.2 8.72	124.0 5.89	100.0 10.00
7	153.9 12.00	155.8 8.47	159.6 12.53	158.9 6.71	141.0 11.87	132.7 6.24	152.8 7.19	154.1 10.25	146.3 8.21	100.0 8.21	100.0 8.21	147.8 12.40	131.2 9.14	131.2 9.14	127.0 6.34	100.0 10.00
8	157.0 11.34	159.4 8.28	162.6 13.37	160.5 6.57	144.0 11.40	133.5 6.24	156.2 6.65	156.1 9.61	149.3 8.64	100.0 8.64	100.0 8.64	149.9 12.49	131.9 8.66	131.9 8.66	127.4 6.90	100.0 10.00
9	160.7 11.06	163.1 7.56	166.0 13.78	162.5 7.84	145.7 11.79	137.2 6.56	160.1 7.20	159.0 9.40	150.7 7.74	100.0 7.74	100.0 7.74	153.2 11.15	135.0 7.99	135.0 7.99	131.3 8.37	100.0 10.00
10	166.4 11.55	167.9 8.81	170.5 13.86	167.7 6.50	150.7 11.22	140.7 6.93	166.1 7.40	165.3 9.99	167.4 8.99	100.0 8.99	100.0 8.99	157.6 13.31	140.9 7.14	140.9 7.14	137.9 10.17	100.0 10.00
11	169.3 11.71	169.4 8.36	172.7 13.50	170.3 8.27	151.4 10.18	143.5 7.41	169.2 8.16	166.9 10.26	170.9 7.40	100.0 7.40	100.0 7.40	161.5 11.92	142.6 9.24	142.6 9.24	143.4 10.20	100.0 10.00
12	171.6 11.37	171.9 8.65	175.3 13.96	172.5 7.01	154.2 9.96	144.4 6.85	171.1 8.18	170.2 11.13	169.4 10.09	100.0 10.09	100.0 10.09	163.7 11.46	144.4 9.47	144.4 9.47	146.9 11.19	100.0 10.00
13	170.7 12.08	171.2 3.87	174.5 15.41	171.1 10.92	152.6 13.46	145.1 9.12	172.2 6.96	170.0 10.73	173.2 7.86	100.0 7.86	100.0 7.86	163.2 11.98	143.1 13.84	143.1 13.84	149.9 13.64	100.0 10.00

A STRING OF ***** INDICATES NO DATA

^a N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.
 * Mean significantly different from control group mean, p<0.05.

Statistical Analysis: One-way ANOVA on values relative to Test Week -1 values followed by
 Dunnett's t test.

TABLE 10

THIRTEEN WEEK CRAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MEAN/SD RELATIVE BODY WEIGHTS FOR FEMALES^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	300	300	100	300	600	30	300	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
TEST WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	11.1	11.6	14.5	13.5	9.1	2.9*	8.6	7.4	4.6*	4.2*	3.4*	11.5	3.6*	3.9*	4.0*	4.6*
	4.74	3.13	5.99	2.99	3.07	4.01	4.55	3.44	2.76	1.99	2.76	7.56	1.65	2.02	2.58	8.63
2	21.9	22.0	23.0	23.7	16.7	5.4*	20.6	19.8	8.8*	-7.5*	*****	21.4	-4.2*	10.4*	4.5*	-2.2*
	4.40	3.74	4.40	3.65	3.43	4.93	3.69	2.20	4.24	3.54(2)	*****	9.13	4.21(s)	2.99	5.66	18.32(s)
3	0.0	29.4	30.7	31.6	23.1*	12.8*	29.4	28.2	14.7*	*****	*****	29.2	.0*	15.5*	9.8*	-5.5*
	5.71	4.14	4.62	4.45	4.70	4.10	5.23	1.99	6.27	*****	*****	11.06	.00(i)	3.06	3.79	12.02(2)
4	39.4	39.1	41.3	42.2	29.7*	22.2*	40.1	37.9	26.9*	*****	*****	38.8	*****	22.0*	17.4*	*****
	7.12	5.76	6.29	6.12	5.72	4.37	6.40	2.96	6.30	*****	*****	11.40	*****	4.55	4.03	*****
5	44.7	45.4	48.8	49.3	34.5*	27.0*	45.7	43.8	33.3*	*****	*****	42.3	*****	24.1*	18.4*	*****
	7.57	5.42	7.97	4.74	6.55	4.78	6.33	3.88	9.05(9)	*****	*****	12.42	*****	3.73	3.72	*****
6	49.7	48.2	52.6	52.6	36.2*	26.6*	50.0	49.3	41.1*	*****	*****	46.6	*****	26.6*	23.0*	*****
	8.16	5.20	8.38	6.08	6.70	5.32	6.91	4.14	8.75(9)	*****	*****	13.34	*****	4.33	4.42	*****
7	55.1	55.9	58.4	57.2	41.1*	32.8*	55.7	54.4	48.8	*****	*****	52.3	*****	31.6*	26.0*	*****
	8.34	5.82	8.29	5.87	7.94	5.53	7.69	5.25	9.94(8)	*****	*****	14.15	*****	4.62	4.67	*****
8	58.2	59.5	61.4	58.8	44.1*	33.6*	59.1	56.4	51.9	*****	*****	54.4	*****	32.3*	26.4*	*****
	7.82	6.28	8.83	5.16	7.81	6.02	7.49	4.84	10.51(7)	*****	*****	13.91	*****	5.48	5.30	*****
9	62.0	63.2	64.8	60.8	45.8*	37.3*	63.0	59.3	59.3	*****	*****	57.7	*****	35.4*	30.3*	*****
	7.90	6.44	9.21	5.83	8.66	6.36	7.73	4.76	9.20(7)	*****	*****	13.32	*****	6.40	6.95	*****
10	67.7	68.0	69.3	66.0	50.8*	40.8*	69.0	65.6	70.6	*****	*****	62.1	*****	41.3*	36.9*	*****
	7.91	6.91	8.87	4.76	7.57	6.09	8.00	5.25	10.24(5)	*****	*****	14.30	*****	5.87	7.06	*****
11	70.5	69.5	71.5	68.6	51.5*	43.6*	72.1	67.2	73.6	*****	*****	66.0	*****	43.0*	42.4*	*****
	8.08	6.43	9.03	6.98	7.53	6.22	8.70	4.80	11.26(5)	*****	*****	13.70	*****	6.72	7.18	*****
12	72.8	72.0	74.1	70.8	54.3*	44.5*	74.0	70.5	72.6	*****	*****	68.2	*****	44.8*	46.1*	*****
	7.96	7.27	9.54	6.20	7.50	6.10	8.55	5.80	14.42(5)	*****	*****	13.13	*****	7.00	9.08(9)	*****
13	71.9	71.3	73.3	69.4	52.7*	44.7*	75.1	70.3	76.4	*****	*****	67.7	*****	43.5*	49.1*	*****
	9.28	7.04	13.36	11.56	8.93	7.91(9)	8.50	7.07	15.95(5)	*****	*****	12.21	*****	10.77	11.27(9)	*****

A STRING OF ***** INDICATES NO DATA

^a N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.

* Mean significantly different from control group mean, p<0.05.

Statistical Analysis: One-way ANOVA on values relative to Test Week -1 values followed by Dunnett's t test.

TABLE 11

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISHER RAT

MEAN/SD FOOD CONSUMPTION VALUES FOR MALES (G)^a

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST WEEK	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
-1	15.2 1.19	15.8 .67	14.8 1.03	14.8 2.75	15.8 .79	15.8 .67	14.4 .84	15.8 .67	15.8 1.23	16.6 2.88	15.8 .94	16.8 2.49	15.2 1.23	13.8 2.15	14.6 .52	14.6 .52
1	16.1 .87	15.6 1.07	15.2 .79	15.8 .42	13.8 .79	7.8 .42	15.4 .52	14.4 1.07	10.6 1.43	5.4 .84	2.4 .52	13.6 1.43	14.8 1.23	12.8 .79	18.8 .08	6.4 1.96
2	17.1 1.01	15.6 1.58	15.2 1.23	16.2 1.55	15.8 1.23	15.8 1.03	15.8 1.03	15.8 1.03	14.2 1.55	11.8 .75(6)	11.8 .75(6)	15.6 .84	7.4 1.26	14.4 3.58	13.6 1.71	9.8 1.48(9)
3	17.3 1.03	16.8 1.03	16.6 .84	17.2 1.23	17.2 1.48	14.6 1.84	16.6 1.07	16.8 2.78	13.2 1.81	13.2 .79	13.2 .79	16.8 1.49	13.8 5.85(5)	15.8 2.86	12.8 1.15	12.8 .08(1)
4	17.9 1.08	17.8 1.03	17.8 .94	17.6 .84	17.8 .94	15.4 1.07	17.4 1.43	16.4 1.58	14.8 .79	14.8 .79	14.8 .79	16.6 .84	8.3 2.31(3)	14.2 1.03	13.4 .52	13.4 .52
5	17.9 .97	17.6 .52	17.2 .79	17.8 1.03	16.8 .79	13.8 1.03	17.4 1.07	16.8 1.55	13.3 .87(9)	13.3 .87(9)	13.3 .87(9)	15.2 1.81	14.4 1.07	12.2 .42	12.2 .42	12.2 .42
6	17.4 1.04	16.8 .79	17.4 1.07	16.6 1.07	16.4 .52	13.6 1.07	17.6 1.07	16.8 .67	13.8 .71(8)	13.8 .71(8)	13.8 .71(8)	16.8 1.15	14.6 1.26	12.4 .52	12.4 .52	12.4 .52
7	18.9 1.43	17.8 .79	18.8 1.33	17.4 .84	16.6 .84	14.6 1.71	18.8 .79	18.2 .79	14.8 1.28(8)	14.8 1.28(8)	14.8 1.28(8)	17.4 .52	15.4 1.58	13.8 .67	13.8 .67	13.8 .67
8	17.2 .95	17.6 .52	16.6 .84	16.8 .79	14.8 .42	13.8 1.23	17.4 1.26	17.8 .67	13.6 1.27(7)	13.6 1.27(7)	13.6 1.27(7)	16.8 .94	14.8 1.33	13.2 1.23	13.2 1.23	13.2 1.23
9	17.6 1.04	17.8 .79	16.8 .79	17.2 .79	15.8 .79	13.4 .84	17.8 1.03	17.8 .42	13.6 2.38(5)	13.6 2.38(5)	13.6 2.38(5)	16.8 1.49	14.8 1.79	12.8 1.03	12.8 1.03	12.8 1.03
10	17.9 .98	17.8 1.23	17.2 1.48	17.2 1.03	16.8 .67	13.6 1.07	18.6 1.43	17.6 1.07	13.8 2.06(4)	13.8 2.06(4)	13.8 2.06(4)	15.4 2.07	16.2 2.15	13.6 .84	13.6 .84	13.6 .84
11	17.7 .58	17.8 .79	17.4 .52	17.4 .84	16.6 .84	13.8 1.48	18.8 1.23	18.6 1.26	15.3 1.53(3)	15.3 1.53(3)	15.3 1.53(3)	16.2 1.48	15.8 .67	14.4 1.24(9)	14.4 1.24(9)	14.4 1.24(9)
12	18.4 .89	18.8 .42	19.8 .67	17.6 .52	16.6 1.07	13.3 .42	19.4 1.07	18.6 1.07	17.5 .71(2)	17.5 .71(2)	17.5 .71(2)	17.6 1.43	16.4 1.07	15.2 2.44(9)	15.2 2.44(9)	15.2 2.44(9)
13	18.5 1.74	19.8 2.11	19.4 1.84	19.2 1.81	17.4 1.43	14.3 1.03	19.8 1.99	20.4 1.71	16.5 .71(2)	16.5 .71(2)	16.5 .71(2)	18.4 3.17	17.2 2.44	15.8 1.58(9)	15.8 1.58(9)	15.8 1.58(9)

A STRING OF ***** INDICATES NO DATA

^a N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.

* Mean significantly different from control group mean, p<0.05.

Statistical Analysis: One-way ANOVA on values relative to Test Week -1 values followed by Dunnett's t test.

TABLE 12

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX), AND TNT/RDX MIXTURES IN THE FISCHER RAT

MEAN/SD FOOD CONSUMPTION VALUES FOR FEMALES (G) ^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	10	30	100	300	600	30	300	125	100	300
RDX (MG/KG/DAY)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TEST WEEK	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	12.3 .80	12.0 .67	12.0 .67	12.6 .52	12.2 .79	12.0 .67	12.2 .42	12.4 .52	12.4 .84	12.4 .52	12.2 .79	12.6 .84	11.6 .52	12.2 .42	12.0 .67	12.6 .84
	11.6 .62	11.6 .84	12.2 1.03	12.2 1.23	11.8 1.03	8.0* 1.76	11.6 .52	11.2 .42	8.0* .00	4.2* 1.23	2.4* .52	11.2 .79	4.2* .42	9.6* .52	7.8* 2.62	5.4* 1.43
	11.8 .66	12.2 .42	12.2 .79	12.4 .84	11.2 .42	11.2 .79	11.6 .52	12.0 .67	10.8* .42	6.8* .96(u)	6.8* .96(u)	12.2 .79	7.0* 3.00(7)	11.6 .52	11.2 1.23	8.2* 1.64(s)
	11.5 .73	11.8 .42	12.0 .67	12.0 1.15	10.6 .84	9.8* .42	11.8 .79	11.8 .79	9.8* .42	6.8* .96(u)	6.8* .96(u)	11.4 .52	6.0* .00(1)	9.4* .52	9.2* .42	9.0* 5.66(7)
	11.5 .63	11.8 .52	12.0 .79	12.4 1.58	9.6* .52	9.2* .42	11.6 .52	11.8 .94	11.2 .79	6.8* .96(u)	6.8* .96(u)	11.2 .42	6.0* .00(1)	9.4* .52	10.0* .67	9.0* 5.66(7)
	11.9 1.36	12.6 .52	13.0* .67	12.8 .42	11.2 .79	9.8* .42	13.2* .79	13.0 .94	11.6 .88(s)	6.8* .96(u)	6.8* .96(u)	12.0 .80	6.0* .00(1)	9.2* .42	10.4* .52	9.0* 5.66(7)
	11.1 .73	11.4 .52	11.8 1.03	11.4 .84	10.0* .67	8.2* .42	11.4 .52	11.2 .42	11.3 .71(9)	6.8* .96(u)	6.8* .96(u)	11.0 .80	6.0* .00(1)	9.2* .42	9.2* .42	9.0* 5.66(7)
	11.2 1.13	11.6 .84	11.4 .52	11.0 .00	9.4* .52	8.8* .42	11.8 .42	11.4 .52	11.3 1.04(s)	6.8* .96(u)	6.8* .96(u)	11.0 .80	6.0* .00(1)	9.2* .42	9.2* .42	9.0* 5.66(7)
	11.1 .69	11.6 .52	11.6 1.07	11.6 .52	9.6* .52	8.6* .52	11.2 .79	11.0 .67	11.0 .67	6.8* .96(u)	6.8* .96(u)	11.2 .42	6.0* .00(1)	9.2* .42	9.2* .42	9.0* 5.66(7)
	11.3 .48	11.4 .84	11.6 .52	11.4 .52	9.2* .42	8.8* .42	11.8 .42	11.4 .52	11.9 1.77(7)	6.8* .96(u)	6.8* .96(u)	11.2 .42	6.0* .00(1)	9.2* .42	9.2* .42	9.0* 5.66(7)
	11.9 .63	11.8 1.03	12.2 .79	11.8 .42	10.0* .52	9.0* .67	12.0 .67	12.2 1.69	11.6 .89(s)	6.8* .96(u)	6.8* .96(u)	12.0 .80	6.0* .00(1)	9.2* .42	9.2* .42	9.0* 5.66(7)
	11.7 .61	12.0 .67	12.0 .67	11.6 .84	10.0* .52	9.0* .67	12.0 .67	11.4 .52	10.4* 1.95(s)	6.8* .96(u)	6.8* .96(u)	11.6 .52	6.0* .00(1)	9.2* .42	9.2* .42	9.0* 5.66(7)
	11.2 .76	11.6 .84	11.8 1.03	11.4 .52	10.2* .42	9.8* .79	11.8 .42	12.0 1.15	12.2 .84(s)	6.8* .96(u)	6.8* .96(u)	12.0 .80	6.0* .00(1)	9.2* .42	9.2* .42	9.0* 5.66(7)
	11.9 1.11	11.2 .42	11.4 1.96	11.8 2.15	8.6* 1.07	8.6* .53(9)	11.4 1.07	11.8 .79	12.4 1.34(s)	6.8* .96(u)	6.8* .96(u)	11.6 .84	6.0* .00(1)	9.2* .42	9.2* .42	9.0* 5.66(7)

A STRING OF ***** INDICATES NO DATA

^a N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.
* Mean significantly different from control group mean, p<0.05.
Statistical Analysis: One-way ANOVA on values relative to Test Week -1 values followed by Dunnett's t test.

TABLE 13

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TMT/RDX MIXTURES IN THE FISHER RAT

MEAN & SD HEMATOLOGY VALUES FOR MALES^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	388	-	-	-	-	-	5	5	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
HEMATOCRIT (%)	42.78	42.87	43.20	38.11*	38.84*	35.87*	41.84	42.26	48.60	*****	*****	41.24	*****	37.78*	37.97*	37.97*
	2.74	2.68	2.81	5.18	1.43	1.85	4.92	2.93	.63(2)	*****	*****	2.33	*****	3.97	2.57(5)	*****
HEMOGLOBIN (G%)	16.85	16.33	16.28	13.77*	13.45*	11.81*	15.56	15.98	15.86	*****	*****	15.29	*****	13.54*	13.69*	*****
	1.84	1.21	1.83	2.22	.44	.63	1.98	.84	.58(2)	*****	*****	.73	*****	1.45	.88(5)	*****
METHGB (G%)	.54	.56	.66	.67	.67	.91*	.68	.58	.37	*****	*****	.53	*****	.59	.61	*****
	.22	.33	.15	.18	.16	.28	.23	.14	.26(2)	*****	*****	.16	*****	.38	.19(5)	*****
* METHGB	3.26	3.39	3.92	4.71	4.78	7.18*	3.76	3.52	2.38	*****	*****	3.38	*****	4.17	4.27	*****
	1.32	2.82	.95	1.53	1.18	2.28	1.42	.93	1.75(2)	*****	*****	1.84	*****	2.86	1.38(5)	*****
ERYTHROCYTES (10 ⁶ /MM ³)	8.76	8.98	8.98	7.95*	7.56*	6.15*	8.57	8.58	8.36	*****	*****	8.45	*****	7.78*	7.71*	*****
	.53	.67	.58	1.12	.32	.42	.99	.56	.25(2)	*****	*****	.46	*****	.89	.66(5)	*****
MCV (U X 10 ³)	48.79	47.88	48.20	47.68	49.98	56.18*	48.88	49.28	48.58	*****	*****	48.58	*****	48.68	48.78	*****
	.88	1.14	1.14	1.51	.74	1.68	.92	.92	.71(2)	*****	*****	1.65	*****	1.43	1.56(5)	*****
MCH (OUG)	19.27	19.22	19.83	18	19.12	21.85*	19.19	19.59	18.88	*****	*****	19.17	*****	18.68	18.97	*****
	.55	.98	.89	.65	.48	1.06	.39	.78	.82(2)	*****	*****	.69	*****	.47	.98(5)	*****
MCHC (G%)	39.64	48.17	39.66	38.73	38.85*	37.88*	39.39	39.92	38.78	*****	*****	39.47	*****	38.28	38.68	*****
	1.15	1.76	1.68	1.38	.97	1.58	1.24	1.55	.42(2)	*****	*****	1.83	*****	.87	1.83(5)	*****
* MCHC	.57	1.11	.48	.38	2.28	4.48*	.48	.88	.88	*****	*****	1.28	*****	1.88	1.56	*****
	.84	1.17	.84	.48	1.83	4.25	.78	.63	.88(2)	*****	*****	1.48	*****	2.15	.88(5)	*****
PLATELETCYTES (% RBC)	1.25	1.51	1.38	1.89	3.61*	9.18*	1.28	1.38	1.68	*****	*****	1.41	*****	2.98*	3.51*	*****
	.72	1.83	.38	.73(5)	1.83(5)	2.96	.59(5)	.56	.88(1)	*****	*****	.68(5)	*****	1.54(5)	2.37(5)	*****
LEUCOCYTES (10 ³ /MM ³)	8.86	9.18	8.22	8.78	8.83	7.24*	9.23	9.58	18.17	*****	*****	9.68	*****	9.74	9.56	*****
	1.81	1.28	.85	.81	1.61	1.88	1.79	1.36	.16(2)	*****	*****	1.81	*****	1.16	1.27(5)	*****
LYMPHOCYTES (% WBC)	76.82	75.67	76.18	78.88	81.68	78.48	74.18	81.88	78.88	*****	*****	74.98	*****	77.48	81.88	*****
	12.37	21.88(5)	8.58	13.78	5.78	7.69	18.27	6.77	16.97(2)	*****	*****	14.91	*****	18.78	11.28(5)	*****
MONOCYTES (% WBC)	.64	.33	.88	.18	.88	.28	1.98	.68	2.58	*****	*****	1.38	*****	1.88	.78	*****
	1.86	.58(5)	1.83	.32	1.23	.42	2.88	.97	3.54(2)	*****	*****	1.25	*****	.94	1.39(5)	*****
EOSINOPHILS (% WBC)	1.57	.89	1.28	1.28	1.18	1.28	1.48	1.48	1.58	*****	*****	2.18	*****	1.38	1.22	*****
	1.48	.68(5)	1.32	1.14	.99	1.23	.97	1.26	2.12(2)	*****	*****	1.79	*****	1.86	1.39(5)	*****
BASOPHILS (% WBC)	.88	.11	.88	.88	.88	.88	.88	.88	.88(2)	*****	*****	.88	*****	.88	.88	*****
	.88	.33(5)	.88	.88	.88	.88	.88	.88	.88(2)	*****	*****	.88	*****	.88	.88(5)	*****
MAJ. NEUTROPH. (10 ³ /MM ³)	28.93	21.44	21.98	28.78	16.58	28.12	22.58	17.88	18.88	*****	*****	21.78	*****	28.38	17.88	*****
	12.37	21.81(5)	7.88	14.24	4.81	6.98	16.87	6.62	11.31(2)	*****	*****	14.59	*****	18.91	18.12(5)	*****
IMM. NEUTROPH. (% WBC)	.84	.88	.88	.88	.88	.88	.88	.88	.88(2)	*****	*****	.88	*****	.88	.88	*****
	.19	.88	.88	.88	.88	.32	.32	.88	.88(2)	*****	*****	.88	*****	.88	.88(5)	*****

^a N = 28 for the control group and 10 for the test groups unless otherwise noted in parentheses.

* Mean significantly different from control group mean, p<0.05.

Statistical Analysis: One-way ANOVA followed by Dunnett's t test.

TABLE 14

**THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-THIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT**

MEAN & SD HEMATOLOGY VALUES FOR FEMALES^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	-	10	30	100	300	600	5	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	-	-	-	-	-	-	300	300	100	300
HEMATOCRIT																
(%)	45.18	46.88	46.82	43.72	38.76*	37.77*	45.12	43.48	42.29	42.29	42.29	44.85	44.85	39.39*	37.42*	37.42*
	1.94	2.84	6.83	1.71	2.81(6)	2.65	1.11	.88	2.28(6)	2.28(6)	2.28(6)	1.48	1.48	1.48(9)	1.48(9)	1.48(9)
HEMOGLOBIN																
(G%)	17.84	17.35	16.92	16.32	13.67*	12.91*	16.96	16.35	15.63*	15.63*	15.63*	16.48	16.48	14.18*	13.30*	13.30*
	.66(24)	.65(6)	.75(6)	.83(9)	1.23	.81	.44(6)	.59(6)	.88(6)	.88(6)	.88(6)	.45(6)	.45(6)	.54(9)	.44(9)	.44(9)
MEYHGB																
(G%)	.28	.19	.18	.14	.26	.52*	.12	.19	.15	.15	.15	.21	.21	.24	.42*	.42*
	-.16(24)	-.18(6)	-.14(6)	-.12(9)	.15	.12	.13(9)	.13(9)	.09(5)	.09(5)	.09(5)	.12(9)	.12(9)	.13	.08(9)	.08(9)
% MYEGB																
	1.16	1.87	1.88	.87	1.89	3.89*	.72	1.14	.93	.93	.93	1.25	1.25	1.65	3.82*	3.82*
	.93(24)	.99(6)	.85(6)	.75(9)	1.21	.75	.79(9)	.76(9)	.58(5)	.58(5)	.58(5)	.78(9)	.78(9)	.89	.55(9)	.55(9)
ERYTHROCYTES																
(10 ⁶ /MM ³)	8.55	8.88	8.96	8.26	7.81*	6.61*	8.48	8.21	8.09	8.09	8.09	8.27	8.27	7.25*	6.93*	6.93*
	.45	.41	1.35	.39	.36	.84	.23	.24	.47(5)	.47(5)	.47(5)	.32	.32	.26	.24(9)	.24(9)
MCV																
(U X 10 ³)	52.78	52.28	52.38	52.68	55.11*	58.98*	53.18	53.88	52.88	52.88	52.88	53.18	53.18	53.78	53.44	53.44
	.75	.63	.68	1.88	1.27(9)	2.68	.57	1.25	.71(5)	.71(5)	.71(5)	.88	.88	.67(9)	.73(9)	.73(9)
MCH																
(UG)	28.68	28.43	28.48	28.39	28.26	21.58*	28.62	28.43	19.86	19.86	19.86	28.62	28.62	28.38	28.34	28.34
	.57	.51	.74	.34	1.65	.76	.46	1.88	.15(5)	.15(5)	.15(5)	.98	.98	.58	.48(9)	.48(9)
MCHC																
(G%)	39.24	39.28	39.06	38.59	36.78*	36.41*	38.79	38.68	38.84	38.84	38.84	38.71	38.71	37.38*	37.82	37.82
	1.82	.91	1.19	.51	3.37(9)	1.49	.76	1.24	.34(5)	.34(5)	.34(5)	1.41	1.41	.97(9)	1.88(9)	1.88(9)
RBC																
(% WBC)	.73	.68	.58	.68	.78	.78	.68	.38	.88	.88	.88	.68	.68	.93	1.88	1.88
	1.11	1.87	.71	.78	.83(9)	1.86	.78	.67	.88(5)	.88(5)	.88(5)	.78	.78	.74	.87(9)	.87(9)
RETICULOCYTES																
(% RBC)	.89	.95	1.33	1.96	4.85*	13.51*	.97	1.54	1.52	1.52	1.52	1.28	1.28	3.37*	4.36*	4.36*
	.38	.19	.51	.87(2)	2.34(6)	5.13(9)	.47(6)	.82(6)	1.85(5)	1.85(5)	1.85(5)	.44	.44	.81	1.78(9)	1.78(9)
LEUCOCYTES																
(10 ³ /MM ³)	7.37	8.85	7.13	7.51	8.49	7.71	9.87*	9.12*	11.93*	11.93*	11.93*	8.48	8.48	8.36	9.21*	9.21*
	1.17	1.34	1.82	.77	1.33	1.89	1.62	1.12	1.76(5)	1.76(5)	1.76(5)	1.38	1.38	.98	1.96(9)	1.96(9)
LYMPHOCYTES																
(% WBC)	79.88	81.58	76.18	77.68	76.22	81.18	78.98	78.18	78.48	78.48	78.48	76.58	76.58	78.38	82.11	82.11
	7.85	9.56	18.92	8.21	9.38(9)	6.82	7.99	9.98	9.15(5)	9.15(5)	9.15(5)	7.71	7.71	8.98	7.42(9)	7.42(9)
MONOCYTES																
(% WBC)	.77	1.88	1.28	.98	.78	.78	.58	.88	1.88	1.88	1.88	.98	.98	1.18	.56	.56
	1.22	1.25	2.78	.99	1.38(9)	.95	.97	.79	1.41(5)	1.41(5)	1.41(5)	1.29	1.29	1.29	1.33(9)	1.33(9)
EOSINOPHILS																
(% WBC)	1.18	1.18	1.98	1.88	1.22	.98	.98	.98	1.88	1.88	1.88	1.88	1.88	1.38	.67	.67
	1.86	.99	.99	1.48	1.38(9)	.99	1.28	.74	2.95(5)	2.95(5)	2.95(5)	1.23	1.23	.95	.71(9)	.71(9)
BASOPHILS																
(% WBC)	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88
	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88
PLAT. NEUTROPH.																
(% WBC)	18.33	16.48	20.88	20.88	21.67	17.28	19.78	20.78	18.88	18.88	18.88	20.78	20.78	19.38	16.67	16.67
	7.83	8.83	18.86	7.58	8.75(9)	6.31	7.85	18.66	7.84(5)	7.84(5)	7.84(5)	6.91	6.91	8.25	7.88(9)	7.88(9)
PLAT. NEUTROPH.																
(% WBC)	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88
	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88

^a N = 30 for the control groups and 10 for the test groups unless otherwise noted in parentheses.

* Mean significantly different from control group mean, p<0.05.

Statistical Analysis: One-way ANOVA followed by Dunnett's t test.

L6116/L6121, STUDY NO.1

TABLE 15

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MEAN & SD CLINICAL CHEMISTRY VALUES FOR MALES^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	350	-	-	-	-	-	5	5	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
GLUCOSE (MG %)	106.5	116.7	112.3	106.4	107.1	110.2	110.6	107.3	103.0	103.0	103.0	109.3	103.0	121.7	105.4	103.0
	18.0	29.5	15.4	15.0	23.1	22.0	14.3	11.8	12.7(2)	12.7(2)	12.7(2)	15.5	15.5	22.4	16.8(9)	16.8(9)
BUN (MG %)	19.5	20.8	20.3	20.8	18.7	20.8	19.5	18.5	18.5	18.5	18.5	17.4	17.4	22.1	24.1	24.1
	2.9	3.8	2.6	3.0	3.2	2.4	2.4	2.8	2.1(2)	2.1(2)	2.1(2)	3.2	3.2	4.4	5.2(9)	5.2(9)
SGPT (IU/L)	32.0	32.5	34.7	27.9	23.6	39.4	31.3	29.3	25.0	25.0	25.0	27.1	27.1	24.9	24.9	24.9
	3.4	4.1	4.5	3.4	4.6	27.0	4.1	4.5	1.4(2)	1.4(2)	1.4(2)	3.8	3.8	5.1	5.0(9)	5.0(9)
TRIGLYCERIDES (MG %)	191.7	198.7	203.4	181.1	256.0	258.1	165.2	126.1	72.0	72.0	72.0	103.5*	103.5*	176.9	138.8	138.8
	52.7	67.5	112.2	47.6	76.3	186.1	51.6	33.0	36.8(2)	36.8(2)	36.8(2)	32.1	32.1	43.4	85.5(9)	85.5(9)
CHOLESTEROL (MG %)	137.4	119.0	138.3	174.1	284.1*	337.1*	145.5	125.7	141.0	141.0	141.0	158.3	158.3	244.5*	193.9*	193.9*
	31.1	26.3(9)	37.3	30.9	74.8	68.0	39.7	21.7	55.2(2)	55.2(2)	55.2(2)	44.2	44.2	81.9	45.4(9)	45.4(9)

^a N = 28 for the control group and 10 for the test groups unless otherwise noted in parentheses.

* Mean significantly different from control group mean, p<0.05.

Statistical Analysis: One-way ANOVA followed by Dunnett's t test.

TABLE 16

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MEAN & SD CLINICAL CHEMISTRY VALUES FOR FEMALES^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	-	-	-	-	-	5	5	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
GLUCOSE (MG %)	96.1	96.9	98.4	91.9	86.1	82.1	91.8	93.6	87.6	87.6	87.6	94.2	87.6	91.8	93.8	87.6
	11.9	6.8	18.1	12.5	21.9(8)	30.2	17.1	13.8	15.1(5)	15.1(5)	15.1(5)	13.8	13.8	5.8	27.3(9)	13.8
BUN (MG %)	19.9	20.8	19.8	19.5	20.9	24.9*	20.3	19.8	20.6	20.6	20.6	18.9	20.6	21.9	21.8	20.6
	3.5	2.5	2.9	2.3	1.2	2.3	3.2	3.5	2.5(5)	2.5(5)	2.5(5)	2.5	2.5	2.8	4.7(9)	2.5
SGPT (IU/L)	34.9	37.2	33.7	35.8	31.9	32.8	34.2	28.5	28.6	28.6	28.6	31.8	28.5	28.3	26.7	28.5
	7.2	10.8	9.3	8.4	8.3	8.2	8.7	4.6	10.1(5)	10.1(5)	10.1(5)	7.4	4.6	6.5	5.8(9)	7.4
TRIGLYCERIDES (MG %)	98.4	117.8	84.1	99.8	113.7	125.8*	86.6	78.8*	48.8*	48.8*	48.8*	70.3*	48.8*	98.9	76.6	48.8*
	25.6	42.6	22.9	15.2	27.1	18.5	24.3	11.4	6.4(5)	6.4(5)	6.4(5)	19.8	6.4(5)	15.1	26.4(9)	19.8
CHOLESTEROL (MG %)	152.7	133.1	164.1	188.4	298.8*	313.4*	138.8	174.2	122.6	122.6	122.6	151.3	122.6	278.9*	285.9	122.6
	54.5	36.8	69.8	42.4	96.1	96.2	43.7	109.3	22.5(5)	22.5(5)	22.5(5)	48.2	22.5(5)	57.7	67.9(9)	22.5(5)
TOTAL PROTEIN (G %)	10.49	9.98	11.82	10.79	10.81	11.36	10.24	10.83	11.12	11.12	11.12	10.16	11.12	10.99	10.74	10.16
	1.11	1.56	2.11(9)	1.41(9)	1.47	.95	.76(9)	1.25	.87(4)	.87(4)	.87(4)	1.02	.87(4)	.97(9)	1.97(7)	1.02
ALBUMIN (G %)	6.19	5.97	6.88	6.37	6.39	6.44	5.98	5.79	6.37	6.37	6.37	6.08	6.37	6.48	6.49	6.08
	.56	.74	.98(9)	.68	.73	.53	.43(9)	.65	.43(4)	.43(4)	.43(4)	.48	.43(4)	.48(9)	.71(7)	.48
GLOBULIN (G %)	4.30	4.01	5.02	4.46	4.42	4.92	4.27	4.24	4.75	4.75	4.75	4.16	4.75	4.51	4.26	4.16
	.85	1.06	1.49(9)	.97(9)	1.01	1.01	.65(9)	.96	1.08(4)	1.08(4)	1.08(4)	.79	1.08(4)	.78(9)	1.03(7)	.79
A/G RATIO	1.49	1.57	1.43	1.47	1.49	1.38	1.43	1.42	1.48	1.48	1.48	1.49	1.48	1.47	1.68	1.48
	.31	.39	.34(9)	.28(9)	.27	.39	.25(9)	.31	.36(4)	.36(4)	.36(4)	.28	.36(4)	.24(9)	.49(7)	.28

^a N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.

* Mean significantly different from control group mean, p<0.05.

Statistical Analysis: One-way ANOVA followed by Dunnett's t test.

L6116/L6121, STUDY NO.1

TABLE 17

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MEAN & SD ORGAN WEIGHTS FOR MALES (G)^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	-	-	-	-	-	5	5	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
TERMINAL BODY WEIGHT	287.9 27.2	284.3 7.8	276.1 25.3	275.5 24.5	250.7* 20.8	212.2* 25.7(9)	278.6 23.3	269.9 20.8	236.5* 10.6(2)	*****	*****	244.5* 30.9	*****	219.1* 16.0	211.0* 19.7(0)	*****
BRAIN	1.88 .13	1.80 .09	1.86 .12	1.83 .07	1.86 .09	1.79 .08(9)	1.90 .10	1.89 .12	1.77 .10(2)	*****	*****	1.79 .14	*****	1.81 .05	1.86 .07(0)	*****
LIVER	9.01 1.20	9.15 .77	9.14 .66	9.63 1.07	10.68* 1.28	11.14* 1.45(9)	9.51 1.41	8.92 .85	8.86 .64(2)	*****	*****	8.51 1.00	*****	10.31* 1.11	10.21 .94(0)	*****
KIDNEY	2.36 .34	2.38 .19	2.37 .15	2.44 .23	2.33 .29	2.11 .20(9)	2.38 .34	2.30 .19	2.14 .14(2)	*****	*****	2.09 .49	*****	2.21 .22	2.00 .21(0)	*****
HEART	.99 .29	.92 .12	.89 .06	.90 .07	.83 .08	.78* .09(9)	.97 .05	.89 .05	.84 .14(2)	*****	*****	.96 .39	*****	.81 .05	.76* .04(0)	*****
SPLEEN	.76 .59	.63 .13	.62 .07	.67 .08	.92 .13	2.15* .37(9)	.68 .12	.64 .10	.50 .04(2)	*****	*****	.65 .16	*****	.83 .14	.64 .12(0)	*****
TESTES	2.945 .160	2.851 .100	2.863 .153	2.968 .133	2.525* .337	.879* .129(9)	2.965 .200	2.906 .122	2.897 .064(2)	*****	*****	2.816 .150	*****	2.953 .136	2.830 .126(0)	*****

a N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.

* Mean significantly different from control group mean, $p < 0.05$.
Statistical Analysis: One-way ANOVA followed by Dunnett's t test.

TABLE 18

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MEAN & SD RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	-	-	-	-	-	5	5	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
TERMINAL BODY WEIGHT	287.9	284.3	276.1	275.5	258.7*	212.2*	278.6	269.9	236.5*	236.5*	236.5*	244.5*	244.5*	219.1*	211.0*	211.0*
	27.2	7.8	25.3	24.5	20.8	25.7(9)	23.3	20.8	10.6(2)	10.6(2)	10.6(2)	30.9	30.9	16.0	19.7(6)	19.7(6)
BRAIN	.656	.663	.679	.669	.748*	.852*	.685	.702	.748	.748	.748	.739*	.739*	.829*	.890*	.890*
	.053	.027	.076	.070	.060	.100(9)	.054	.037	.011(2)	.011(2)	.011(2)	.088	.088	.064	.099(6)	.099(6)
LIVER	3.126	3.217	3.323	3.499*	4.250*	5.249*	3.407	3.313	3.744	3.744	3.744	3.489*	3.489*	4.718*	4.852*	4.852*
	.268	.223	.231	.276	.219	.250(9)	.367	.277	.102(2)	.102(2)	.102(2)	.281	.281	.552	.380(3)	.380(3)
KIDNEY	.824	.838	.863	.888	.927	1.001*	.862	.883	.906	.906	.906	.853	.853	1.012*	.988*	.988*
	.117	.057	.079	.059	.058	.075(9)	.140	.077	.020(2)	.020(2)	.020(2)	.180	.180	.100	.095(6)	.095(6)
HEART	.344	.324	.325	.330	.333	.367	.350	.331	.353	.353	.353	.403	.403	.372	.360	.360
	.090	.041	.028	.022	.025	.025(9)	.020	.019	.045(2)	.045(2)	.045(2)	.191	.191	.028	.031(6)	.031(6)
SPLEEN	.269	.222	.227	.244	.368	1.010*	.245	.236	.213	.213	.213	.266	.266	.379	.304	.304
	.212	.046	.027	.029	.063	.112(9)	.049	.034	.007(2)	.007(2)	.007(2)	.054	.054	.066	.055(6)	.055(6)
TESTES	1.029	1.004	1.043	1.083	1.007	.420*	1.066	1.081	1.226*	1.226*	1.226*	1.168*	1.168*	1.353*	1.348*	1.348*
	.077	.052	.082	.070	.103	.079(9)	.047	.076	.028(2)	.028(2)	.028(2)	.153	.153	.107(6)	.090	.090

^a N = 30 for the control group and 10 for the test groups unless otherwise noted in parentheses.

* Mean significantly different from control group mean, $p < 0.05$.

Statistical Analysis: One-way ANOVA followed by Dunnett's t test.

TABLE 19

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MEAN & SD ORGAN WEIGHTS FOR FEMALES (G)^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	-	-	-	-	-	5	5	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
TERMINAL BODY WEIGHT	163.9 11.8	161.1 7.7	163.2 19.9	163.9 8.7	143.7* 8.1	136.2* 6.4(9)	161.9 6.8(9)	161.5 8.9	159.4 8.9(5)	*****	*****	157.8 13.9	*****	135.9* 9.0	140.4* 13.2(9)	*****
BRAIN	1.73 .11	1.73 .08	1.76 .11	1.69 .09	1.69 .17	1.66 .09(9)	1.72 .10(9)	1.74 .11	1.77 .03(5)	*****	*****	1.74 .12	*****	1.68 .08	1.74 .10(6)	*****
LIVER	5.05 .39	4.85 .38	4.87 .67	5.41 .49	5.68* .42	6.65* .49(9)	5.14 .40(9)	5.24 .40	5.88* .28(5)	*****	*****	5.39 .68	*****	5.68* .35	6.31* .75(6)	*****
KIDNEY	1.46 .11	1.45 .10	1.51 .16	1.54 .06	1.45 .06	1.39 .08(9)	1.48 .06(9)	1.51 .08	1.45 .07(5)	*****	*****	1.53 .08	*****	1.45 .08	1.47 .11(6)	*****
HEART	.59 .04	.59 .03	.60 .04	.58 .02	.56 .04	.54* .05(9)	.57 .03(9)	.59 .04	.56 .05(5)	*****	*****	.56 .04	*****	.54* .01	.55 .05(6)	*****
SPLEEN	.41 .05	.42 .05	.44 .10	.46 .06	.64* .20	1.48* .32(9)	.42 .04(9)	.46 .05	.41 .07(5)	*****	*****	.42 .05	*****	.49 .07	.53 .08(6)	*****
OVARIES	.072 .014(2.9)	.064 .006	.074 .010	.069 .013	.062 .012	.054* .012(9)	.071 .014(9)	.069 .011	.059 .015(5)	*****	*****	.070 .016	*****	.061 .013	.064 .014(6)	*****

^a N = 30 for the control groups and 10 for the test groups unless otherwise noted in parentheses.* Mean significantly different from control group mean, $p < 0.05$.
Statistical Analysis: One-way ANOVA followed by Dunnett's t test.

TABLE 20

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MEAN & SD RELATIVE ORGAN WEIGHTS FOR FEMALES (* BODY WEIGHT)^a

TREATMENT GROUP	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	-	1	5	25	125	300	-	-	-	-	-	5	5	125	125	125
RDX (MG/KG/DAY)	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300
	163.9	161.1	163.2	163.9	143.7*	136.2*	161.9	161.5	159.4	*****	*****	157.8	*****	135.9*	140.4*	*****
TERMINAL BODY WEIGHT	11.8	7.7	19.9	8.7	8.1	6.4(9)	6.8(9)	8.9	8.9(5)	*****	*****	13.9	*****	9.0	13.2(0)	*****
BRAIN	1.060	1.075	1.094	1.032	1.175*	1.216*	1.064	1.062	1.114	*****	*****	1.111	*****	1.240*	1.244*	*****
	.074	.058	.151	.053	.099	.051(9)	.081(9)	.077	.054(5)	*****	*****	.102	*****	.064	.095(0)	*****
LIVER	3.087	3.010	2.981	3.312	3.952*	4.886*	3.172	3.247	3.690*	*****	*****	3.409*	*****	4.186*	4.491*	*****
	.252	.116	.190	.346	.196	.349(9)	.170(9)	.217	.153(5)	*****	*****	.265	*****	.229	.249(0)	*****
KIDNEY	.089	.092	.030	.044	1.012*	1.023*	.916	.934	.910	*****	*****	.976*	*****	1.067*	1.048*	*****
	.047	.040	.072	.051	.049	.061(9)	.050(9)	.044	.009(5)	*****	*****	.059	*****	.071	.053(0)	*****
HEART	.362	.368	.373	.355	.390*	.390*	.355	.363	.353	*****	*****	.354	*****	.396*	.393*	*****
	.025	.018	.029	.019	.026	.024(9)	.015(9)	.022	.014(5)	*****	*****	.023	*****	.028	.014(0)	*****
SPLEEN	.252	.260	.266	.280	.443*	1.083*	.257	.283	.259	*****	*****	.267	*****	.362*	.378*	*****
	.025	.034	.050	.039	.134	.195(9)	.020(9)	.032	.033(5)	*****	*****	.042	*****	.034	.028(0)	*****
OVARIES	.044	.040	.046	.042	.043	.040	.044	.043	.037	*****	*****	.045	*****	.045	.045	*****
	.009(29)	.003	.010	.008	.008	.010(9)	.009(9)	.007	.007(5)	*****	*****	.010	*****	.010	.007(0)	*****

*** INDICATES STATISTICAL SIGNIFICANCE
 AT THE .05 LEVEL

^a N = 30 for the control groups and 10 for the test groups unless otherwise noted in parentheses.

* Mean significantly different from control group mean, p<0.05.
 Statistical Analysis: One-way ANOVA followed by Dunnett's t test.

TABLE 21
THIRTEEN WEEK SUBCHRONIC (EXPLORATORY/RANGEFINDING) ORAL (DIET) TOXICITY STUDY
OF TRINITROTOLUENE, CYCLOTTRIMETHYLENE TRINITRAMINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

L6116/L6121, Study No. 1

PATHOLOGY SUMMARY

TREATMENT GROUP	S	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
TNT (MG/KG/DAY)	E	-	1	5	25	125	300	-	-	-	-	-	5	5	125	125	125
RDX (MG/KG/DAY)	D	-	-	-	-	-	-	10	30	100	300	600	30	300	30	100	300

ORGAN/LESION

Summary of Gross Necropsy Observations

BRAIN:																	
Clot/Injected Vessels	M	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0	1	2	1	0	1	0	1	0
SPLEEN:																	
Enlarged	M	0	0	0	0	2	10	0	0	0	0	0	0	0	2	0	0
	F	0	0	0	0	3	10	0	0	0	0	0	0	0	0	0	0
TESTES:																	
Small	M	0	0	0	0	0	9	0	0	0	0	0	0	2	0	0	2
UTERUS:																	
Slender	F	0	0	0	0	0	4	0	0	3	0	0	0	0	1	2	0

Summary of Histopathologic Lesions

BRAIN:																	
Focal Vacuolation, Malacia-Cerebellum	M	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
LIVER:																	
Hepatocytomegaly	M	0	0	0	0	6	10	0	0	0	0	0	0	0	1	0	0
	F	0	0	0	0	0	8	0	0	0	0	0	0	0	0	5	1
Pigment-laden Macrophages	M	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
Bile Duct Proliferation	M	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
KIDNEYS:																	
Pigment	M	1	0	0	0	8	10	0	0	0	0	0	0	0	0	1	0
	F	0	0	0	0	8	10	0	0	0	0	0	0	0	8	8	1
TESTES:																	
Degeneration of Seminiferous Tub. Epithelium	M	0	0	0	1	5	10	0	0	0	1	1(9)	0	0	0	0	0
HypospERMato-genesis	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hyperplasia of Interstitial (Leydig) Cells	M	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0
SPLEEN:																	
Sinusoidal Congestion	M	0	0	0	1	1	9	0	0	0	0	0	0	0	2	0	0
	F	0	0	0	0	4	10	0	0	0	0	0	0	0	0	0	0
Hemosiderosis	M	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0

N = 30 for the control group and 10 for the test groups unless otherwise noted in parenthesis.

APPENDIX I
CHEMISTRY METHODOLOGY

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ANALYSIS OF TNT AND/OR RDX IN ANIMAL FEED

SCOPE AND APPLICATION

- 1.1 This method covers the determination of TNT and/or RDX in diet premixes and diet samples.
- 1.2 The sensitivity of this method is usually dependent on the level of interferences present in the samples, rather than the instrumental limitations.
- 1.3 This method is recommended for use only by experienced analysts familiar with High Performance Liquid Chromatography (HPLC) or under close supervision of such qualified persons.

SUMMARY OF THE METHOD

- 2.1 A weighed quantity of the premix was stirred with 50 ml of acetonitrile for 30 minutes. The suspension was filtered through a pad of celite and the filtrate was transferred with washings to a volumetric flask. Benzophenone, the internal standard was added to the filtrate or a portion thereof and this solution was diluted to its final volume. The samples were analyzed using reverse phase high performance liquid chromatography. Each was eluted on 3.9 mm x 30.0 cm μ -Bondapak C₁₈ column with methanol:water (60%:40%) and the eluant was monitored with an ultraviolet absorption detector at $\lambda = 254$ nm.

ANALYSIS OF TNT AND/OR RDX IN ANIMAL FEED

INTERFERENCES

- 3.1 Solvents, reagents, glassware and other sample processing hardware may yield discrete artifacts and/or elevated baselines causing misinterpretation of chromatograms. All of these materials must be shown to be free from interferences under the conditions of the analysis by running method blanks.
- 3.2 Interferences coextracted from the samples will vary considerably from source to source, depending on the type of animal feed used in the study.

MATERIALS

- 4.1 Erlenmeyer flasks, 125 ml
- 4.2 Filtering apparatus, vacuum flask, 125 ml; fritted glass filters, porosity M, ASTM 10-20 microns
- 4.3 Round bottom flasks, 24/40, 125 ml.

EQUIPMENT

- 5.1 Mettler Grammatic Analytical Balance, No. 1-910
- 5.2 Corning Hot Plate Stirrers BC 351
- 5.3 Buchi Evaporator, Model R
- 5.4 Higher Performance Liquid Chromatograph (Water's Model 244)
 - constant flow, isocratic pumping system
 - reverse phase column, 10 μ - 3.9 mm x 30 cm μ -Bondapak C₁₈ column
 - fix wavelength ultraviolet detector λ = 254 nm
 - strip chart recorder and electronic integrator capable of measuring peak areas and performing an internal standard calculation.

ANALYSIS OF TNT AND/OR RDX IN ANIMAL FEED

REAGENTS

- 6.1 Celite, analytical filter-aid, John-Mansville Company
- 6.2 Benzophenone, an internal standard, Aldrich Chemical Company
- 6.3 Methanol, Methylene Chloride, Burdick and Jackson Company

CALIBRATION

- 7.1 Calibration standards were prepared from stock solutions containing 200 µg TNT, RDX and benzophenone per ml acetonitrile so as to bracket the working range of the chromatographic system. These concentrations were: 2 µg/ml, 10 µg/ml, 20 µg/ml, and 40 µg/ml.
- 7.2 A constant injection volume of 10 µl was employed for all measurements.
- 7.3 In order to determine the precision of the HPLC system, a series of 6 replicate injections of the 20 µg/ml solution were made. These measurements were made every few weeks or whenever instrument related problems were apparent.
- 7.4 Retention times should remain relatively constant (within $\pm 5\%$ day to day) with RDX being 2.8 minutes, TNT 4.6 minutes, and Benzophenone 10.1 minutes under the specified conditions.

QUALITY CONTROL

- 8.1 Before processing any samples, the analyst should demonstrate through the analysis of a blank that all glassware and reagents are interference free. Each time a set of samples is extracted or there is a change in reagents, a method blank should be processed as a safeguard against laboratory contamination.
- 8.2 Standard quality assurance practices were used with this method. A minimum of 5 replicate spiked samples were analyzed to validate the accuracy of the method. If doubt should arise concerning the identity of the peak on a chromatogram, confirmatory techniques such as mass spectrometry should be used.

ANALYSIS OF TNT AND/OR RDX IN ANIMAL FEED

SAMPLE EXTRACTION

- 9.1 A feed sample (usually one gram for the premix sample and 10 grams for the diet samples) was weighed out in a 125 ml Erlenmeyer flask using standard operating procedures. The extracting solvent (50.0 ml acetonitrile) was added to the flask and it was stoppered. The sample was extracted with stirring for 30 minutes at room temperature.
- 9.2 Following extraction the sample was filtered through a pad of celite supported on a fritted glass filter. The celite pad was prepared by adding 25.0 ml of a celite suspension (10 g of celite per liter acetonitrile) to the fritted glass funnel of the vacuum apparatus and applying the vacuum from a water aspirator.
- 9.3 The extraction mixture was swirled to form a uniform suspension and immediately poured into the glass funnel and filtered. A stirring rod was used to drain the last drops of liquid from the flask.
- 9.4 The extraction flask was rinsed four times with 3.0 ml of acetonitrile. The washings were transferred to the funnel of the vacuum apparatus using a Pasteur pipette. This procedure was repeated three times. The vacuum was reapplied and the washing procedure completed.
- 9.5 The extracts obtained from the diet premixes were transferred to a 500 ml volumetric flask via a funnel. The vacuum flask was rinsed four times with three ml acetonitrile. Each washing was individually transferred to the volumetric flask with a Pasteur pipette and the volume was brought to 500 ml with acetonitrile. An aliquot of the diluted filtrate (1 ml) was transferred using a volumetric pipette into a 10 ml volumetric flask. The internal standard solution (1 ml of 200 µg benzophenone/ml acetonitrile) was added and this was brought to a volume of 10 ml with acetonitrile.

In the case of the diet samples, the extracts were transferred to a 100 ml volumetric flask in the manner described above and the extracts with washings was brought to volume with acetonitrile, after the internal standard benzophenone had been added. The solution was further diluted if this step was required to bring the sample into the working range of the chromatographic system.

ANALYSIS OF TNT AND/OR RDX IN ANIMAL FEED

STORAGE OF SAMPLES

- 10.1 If the above procedure is stopped at any point during a working day, the samples should be stored in stoppered vessels at room temperature in the absence of light.

HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)

- 11.1 Each sample was analyzed by reverse phase HPLC using the conditions described below: column, 3.9 mm x 30.0 cm μ -Bondapak C_{18} ; solvent system, methanol:water (60:40%, v/v); flow rate, 1.6 ml/min; detection, uv at 254 nm; sensitivity 0.1 AUFS. The retention times of TNT and benzophenone were 6.4 and 10.1 minutes, respectively. The limit of detection was 2 μ g TNT/ml acetonitrile and is defined as 5x the background noise. The representative chromatogram is Figure 1.
- 11.2 The chromatographic system was calibrated daily with a minimum of three injections of two standards representative of the chromatographic range.
- 11.3 An injection volume of 10.0 μ l was used for each sample. If the peak height exceed the linear range of a sample it was diluted and reanalyzed.

CALCULATIONS

- 12.1 Determine the concentration of TNT and/or RDX using the formula:

$$\% \text{ TNT in Sample} = \frac{(Ax)(W_{is}) \times D \times 100}{(Fx) A_{is} (W_s)}$$

where

A_x = Area (X) where x is either RDX or TNT

A_{is} = Area (internal standard)

$F_x = \frac{\text{Area (X)} \times \text{weight (is)}}{\text{Area (is)} \times \text{weight (Wx)}}$

W_{is} = Weight of the internal standard

W_s = Weight of the sample

D = The dilution factor

W_x = Wt of component x is either RDX or TNT

ANALYSIS OF TNT AND/OR RDX IN ANIMAL FEED

12.2 The results should be reported in % TNT or RDX in the sample. Where replicate samples are analyzed, all data should be reported. All results were recorded in standard IITRI logbooks and these plus chromatograms and data tapes were retained in the Chemistry Division Q.A. files.

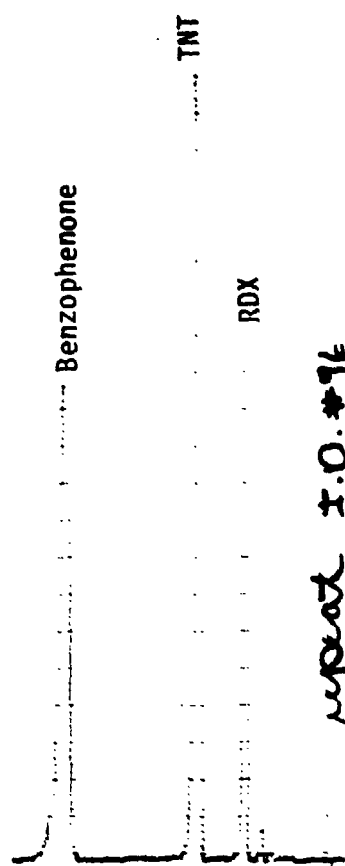


Figure 1. Chromatogram of TNT-RDX Benzophenone Standard,
20 µg/ml

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APPENDIX II
5002 CERTIFICATION PROFILE

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**ANALYTICAL RESULTS¹ OF CERTIFIED RODENT
CHOW NO. 5002, LOT NO. 10-22-79-J MEAL**

<u>Possible Contaminants</u>	<u>Analytical Results</u>	
	<u>Found</u>	<u>Maximum Allowed</u>
Nitrates	12.2 ppm	NA ^a
Nitrites	< 0.1 ppm	NA
Mercury	2.4 ppm	0.2 ppm
Arsenic	< 1.0 ppm	1.0 ppm
Cadmium	< 1.0 ppm	0.5 ppm
Lead	< 1.0 ppm	1.5 ppm
Penicillin	ND ^b	NA
BHT	5.6 ppm	NA
BHA	< 0.5 ppm	NA
Total Estrogen	5.5 ppm	0 ^c
Chlortetracycline	454 mg/ton	0
Aflatoxins - B ₁ , B ₂ , G ₁ , G ₂	ND	10 ppb
Chlorinated Pesticides:		
Dieldrin	0.04 ppm	0.05 ppm
Endrin	ND	0.05 ppm
Aldrin	ND	0.05 ppm
Heptachlor Epoxide	0.02 ppm	0.05 ppm
BHC	0.01 ppm	NA
Lindane	ND	0.05 ppm
DDT Total	0.01 ppm	0.15 ppm
Methoxychlor	ND	0.05 ppm
Chlordane	ND	0.05 ppm
Mirex	ND	NA
Toxaphene	ND	NA
Strobane	ND	NA
HCB	ND	NA
PCB	0.55 ppm ^d	0.15 ppm
Polychlorinated dioxins	ND	NA
Organo Phosphates:		
Parathion	ND+	0.5 ppm
Methyl Parathion	0.09 ppm	0.5 ppm
Ethion	ND	0.5 ppm
Carbophenothion	ND	NA
Malathion	0.38 ppm	0.5 ppm
Ronnol	ND	NA
Diazinon	ND	NA
Disulfeton	0.08 ppm	0.5 ppm
Phorate	ND	NA

¹ Provided by Diversified Lab. Inc., Fairfax, VA, Feb. 22, 1980.

a - NA = Not applicable

b - ND = None

c - 0 = Ralston Purina Co. claims none found

d - Arochlor 1254

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APPENDIX III
DIVERSIFIED LABORATORIES CHEMISTRY METHODS

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ANALYTICAL PROCEDURES USED BY DIVERSIFIED LABORATORIES, FAIRFAX, VA
TO ANALYZE PURINA CERTIFIED RODENT CHOW NO. 5002 FOR IMPURITIES

6

<u>Procedure</u>	<u>Limit of Detectability</u>	<u>References</u>
Chlorinated Pesticide Screen	10 ppb	A.O.A.C. 29.001 (GLC/EC)
Phosphated Pesticide Screen	50 ppb	A.O.A.C. 29.033 (GLC/EC)
Polychlorinated Biphenyls (PCBs)	100 ppb	A.O.A.C. 29.000 (modification with sulfonation and MgO column chromatography; GLC/EC)
Hexa-, hepta-, octachlorodibenzo-p-dioxin	<100 ppb	A.O.A.C. 28.118
Heavy Metals		
Arsenic	1.0 ppb	A.O.A.C. 42.005 (colorimetric)
Cadmium	10 ppb	A.O.A.C. 25.026 (A.A.)
Lead	10 ppb	A.O.A.C. 25.058 (A.A.)
Mercury	<1 ppb	A.O.A.C. 25.103 (colorimetric)
Nitrates	<1.0 ppm	A.O.A.C. 7.030
Nitrites	<1.0 ppm	A.O.A.C. 7.030
Aflatoxins	2.0 ppb	A.O.A.C. 26.003 (TLC)
Penicillin	<2.0 ppm	A.O.A.C. 42.252
Chlortetracycline	10 ppm	A.O.A.C. 42.207
Butylated hydroxytoluene	1.0 ppm	A.O.A.C. 20.009
Butylated hydroxyanisole	1.0 ppm	A.O.A.C. 20.009
Estrogens	-----	A.O.A.C. 39.000 (modification)

A.O.A.C. - Official methods of analysis of the Association of Official Analytical Chemists.

APPENDIX IV
HEMATOLOGY METHODOLOGY

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HEMATOLOGY METHODS

HEMOGLOBIN

Cyanmethemoglobin method. $\text{True[Hgb]} = \text{measured[Hgb]} - [\text{metHgb}]$
Coulter Counter Model S. System

HEMATOCRIT

Indirect method; calculated value based on erythrocyte count and mean corpuscular volume
Coulter Counter Model S. System

METHEMOGLOBIN

Cyanomethemoglobin method. $\% \text{ metHgb} = \left(\frac{\text{metHgb}}{\text{Hgb} + \text{metHgb}} \right) \times 100$

Evelyn, K. A. and Malloy, H.T.
J. Biol. Chem. 126, 655, 1938.

ERYTHROCYTE COUNT

Electronic Counting Procedure
Coulter Counter Model S. System

NUCLEATED RBCs

Wright stain procedure

Schalm, O.W., Jain, N.C. and Carroll, E.J. Veterinary Hematology, Color Plates Chapter, 3rd Edition, Lea & Febiger, 1975.

RETICULOCYTE COUNT

New methylene blue staining procedure
Brecher, G. Am. J. Clin. Path. 19, 895, 1949.

LEUKOCYTE COUNT

Electronic Counting Procedure
Coulter Counter Model S. System

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LEUKOCYTE DIFFERENTIAL COUNT

Neutrophils - Immature

Neutrophils - Mature

Monocytes

Basophils

Lymphocytes

Eosinophils

Wright stain procedure

Schalm, O.W., Jain, N.C. and Carroll, E.J. Veterinary Hematology,
Color Plates Chapter, 3rd Edition, Lea & Febiger, 1975.

APPENDIX V
CLINICAL CHEMISTRY METHODOLOGY

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CLINICAL CHEMISTRY METHODS

GLUCOSE

Hexokinase method

Centrifichem Centrifugal Analyzer System
Neeley, W.E. Clin. Chem. 18, 509, 1972.

UREA NITROGEN (BUN)

Modified urease technique

Centrifichem Centrifugal Analyzer System
Karmen, A. J. Clin. Invest. 34, 131, 1955.

TRIGLYCERIDES

Tetrazolium Salt Reduction Method

Centrifichem Centrifugal Analyzer System
Klotzsch, S., Serricchio, M. and Furedi, R.
Advances in Automated Analysis
Vol. 1, Mediad Inc., Tarrytown N.Y. p. 111, 1973.

CHOLESTEROL

Cholesterol esterase-cholesterol oxidase method

Centrifichem Centrifugal Analyzer System
Rosesclaw, P., Bernt, E. and Gruber, W. Z.f. Klin. Chem. u.
Klin. Biochem. 12, 226, 1974.

TOTAL PROTEIN

Buired technique

Centrifichem Centrifugal Analyzer System
Failing, I.F., Jr., Buckley, N.W. and Zak, B. Am. J. Clin. Path.
33, 83, 1960.

ALBUMIN

Bromocresol Green Method

Centrifichem Centrifugal Analyzer System

Rodkey, I.L. Clin. Chem. 11, 478, 1965.

APPENDIX VI
INDIVIDUAL ANIMAL DATA

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TABLE 7-1
THIRTEEN WEEK OPAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAMETHO-1,2,5-TRINITRO-1,3,5-TRIAZINE (HMT) AND TNT/HMT MIXTURES IN THE "DISCIP" RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)
TEST
WEEK

ANIMAL
NUMBER

(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
108	142	159	190	206	216	236	244	249	261	266	273	280	267
149	185	212	239	256	261	292	301	308	316	322	323	337	325
114	141	168	199	232	250	257	266	283	294	302	318	324	327
126	154	174	198	212	222	236	239	245	264	269	282	286	288
108	132	155	177	204	211	234	244	261	271	277	287	301	301
136	173	201	230	252	257	284	292	309	316	330	336	346	346
122	150	182	200	216	237	264	271	281	288	300	299	325	313
118	145	175	194	216	232	255	264	274	275	292	291	310	297
144	144	164	192	218	237	255	268	276	291	300	308	318	322
108	127	141	159	178	201	221	229	238	259	261	273	286	237
107	138	166	198	220	233	256	260	267	284	289	295	307	286
129	158	180	203	228	237	260	270	278	290	294	304	317	307
100	136	160	191	216	232	244	252	262	278	284	298	305	308
14	167	195	218	236	243	257	262	274	287	285	296	300	313
112	147	175	201	221	239	254	266	275	279	293	303	309	298
115	148	175	197	217	233	263	269	277	286	295	305	311	304
121	137	168	187	204	233	227	235	248	259	263	273	278	281
111	146	157	183	202	204	224	239	247	257	267	277	288	292
111	139	166	189	206	217	233	245	251	260	268	275	283	283
120	146	171	188	206	224	244	252	265	274	284	278	304	303
21	131	154	180	198	191	215	221	227	238	245	246	258	239
22	181	216	244	269	265	300	311	324	335	348	350	368	347
23	121	146	169	186	198	220	234	241	246	257	266	272	276
24	138	160	184	202	213	238	252	256	263	279	290	303	303
118	149	173	207	243	246	275	296	297	305	318	334	344	341
26	147	165	189	212	220	248	263	268	274	290	306	317	322
27	147	163	187	210	222	237	254	263	268	283	294	304	295
116	148	178	196	219	234	252	261	270	270	275	292	297	288
125	146	165	185	203	216	232	242	251	259	273	285	295	295
125	159	183	201	220	228	246	257	265	272	287	297	300	295

A STRING OF ***** INDICATES NO DATA

TABLE 7-II
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

II

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)
TEST
WEEK

1

(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER													
31	115	145	173	203	228	241	260	263	275	288	296	298	291
32	129	151	170	197	220	233	245	256	264	277	287	294	284
33	137	154	175	198	221	224	246	248	259	272	280	290	299
34	120	139	178	205	227	236	255	271	279	292	297	309	321
35	116	142	164	159	201	220	240	253	259	277	283	296	293
36	121	142	158	182	203	218	235	244	247	259	271	277	281
37	116	146	170	200	217	230	252	257	265	276	285	300	301
38	98	113	128	152	170	194	218	226	240	255	262	277	291
39	117	140	164	192	214	224	240	247	260	271	279	284	304
40	127	152	177	199	220	230	244	251	263	270	279	288	305

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 7-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

III

TNT (MG/KG/DAY)

5

RDX (MG/KG/DAY)

-

TEST

WEEK

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ALLING NUMBER														
41	117	133	154	168	188	205	221	230	242	252	256	270	286	291
42	115	139	163	191	210	226	240	256	263	274	280	295	297	302
43	130	158	182	206	229	237	250	261	267	280	281	291	311	308
44	100	119	140	164	180	197	212	221	225	238	242	248	255	264
45	140	165	187	208	227	237	249	259	273	276	288	300	298	281
46	116	141	160	180	199	214	229	238	246	256	266	277	285	273
47	124	153	182	213	241	253	264	274	278	288	296	307	314	312
48	118	141	157	177	198	212	230	246	252	262	272	285	296	296
49	118	139	162	189	209	221	246	260	272	277	298	298	312	288
50	96	110	126	144	159	169	180	191	197	199	214	217	221	220

A STRING OF ***** INDICATES NO DATA

TABLE 7-IV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

IV

TNT (MG/KG/DAY)

25

RDX (MG/KG/DAY)

-

TEST

WEEK

(-1)

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

(12)

(13)

ANIMAL

NUMBER

51

52

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314

A STRING OF ***** INDICATES NO DATA

TABLE 7-V
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		V													
		125													
TNT (MG/KG/DAY)															
RDX (MG/KG/DAY)															
TEST WEEK		(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER															
61	118	136	155	177	177	201	210	226	235	240	251	253	260	265	268
62	129	147	168	186	186	205	213	233	236	242	247	253	259	265	243
63	116	129	149	167	167	191	204	218	225	227	241	247	253	258	266
64	117	135	152	163	163	179	192	208	215	218	233	238	246	251	256
65	113	130	147	164	164	183	188	202	205	210	217	227	232	238	248
66	115	135	164	182	182	206	216	234	232	240	250	258	272	273	272
67	126	145	171	191	191	210	219	231	238	245	255	257	272	276	268
68	130	155	184	210	210	237	244	267	271	271	288	290	303	309	298
69	124	144	164	186	186	199	213	230	233	234	246	254	262	270	272
70	131	147	170	186	186	205	209	222	227	230	237	240	252	258	260

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 7-VI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		VI												
TNT (MG/KG/DAY)		300												
RDX (MG/KG/DAY)		-												
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
71	117	135	139	153	167	179	197	204	207	220	223	229	238	222
72	111	118	122	127	141	146	154	158	163	172	175	183	188	175
73	112	125	124	135	156	163	178	176	185	188	194	197	209	193
74	133	148	152	162	186	197	218	215	221	226	230	241	247	232
75	120	133	135	152	170	178	198	204	200	209	210	216	221	225
76	130	144	150	158	177	184	204	205	210	223	224	224	232	233
77	117	133	142	151	177	188	202	214	214	224	226	238	241	236
78	115	125	125	132	148	154	162	168	172	186	186	194	198	194
79	128	141	143	158	177	191	206	208	209	225	229	234	242	242
80	129	145	150	170	195	212	220	224	228	239	238	248	254	258

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 7-VII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		VII													
		- 10													
TNT (MG/KG/DAY)	POZ (MG/KG/DAY)	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
WEEK															
ANIMAL															
NUMBER															
81	105	127	148	170	190	190	199	222	231	239	246	260	270	277	280
82	110	148	173	202	229	229	234	266	276	284	287	304	316	325	323
83	120	141	156	177	193	193	214	229	238	253	256	273	277	284	287
84	101	116	132	157	173	173	190	207	217	230	236	244	257	266	271
85	135	164	185	212	232	232	228	265	279	288	286	314	328	337	340
86	101	125	143	167	189	189	190	224	240	246	248	272	284	294	301
87	127	158	182	206	224	224	232	249	261	268	273	284	290	300	291
88	104	124	148	181	204	204	213	237	250	265	275	280	294	304	293
89	120	140	163	185	207	207	228	243	259	268	282	286	299	312	270
90	115	134	160	182	205	205	220	233	243	251	262	266	276	285	265

A STRING OF ***** INDICATES NO DATA

TABLE 7-VIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAMETRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

VIII

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)
TNT
RDX

30

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
INTERNAL NUMBER														
91	109	124	137	151	167	180	202	215	226	238	250	260	276	283
92	121	146	164	179	193	206	222	230	242	250	258	266	275	277
93	102	120	131	148	165	176	191	203	210	226	229	234	241	245
94	101	122	138	162	178	195	215	222	235	249	258	268	276	277
95	136	155	173	195	213	233	248	261	267	281	286	295	312	314
96	123	150	169	196	217	233	250	264	269	280	286	297	308	313
97	113	131	143	158	175	175	202	204	215	225	240	253	261	250
98	124	153	175	195	214	210	244	250	257	268	278	292	295	280
99	124	154	176	205	231	244	266	273	280	287	299	306	312	279
100	110	134	155	180	195	205	219	227	236	242	246	255	265	243

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 7-IX
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

IX

TNT (KG/KG/DAY)
RDX (KG/KG/DAY)-
100TEST
WEEK

(-1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER													
101	118	127	140	155	163	178	186	199	195	187	*****	*****	*****
102	126	160	173	191	205	*****	*****	*****	*****	*****	*****	*****	*****
103	138	170	186	194	197	215	190	194	*****	*****	*****	*****	*****
104	149	157	177	185	194	213	232	250	265	268	284	271	251
105	123	126	139	150	158	174	180	*****	*****	*****	*****	*****	*****
106	134	136	148	156	164	175	170	172	*****	*****	*****	*****	*****
107	143	155	170	190	*****	*****	*****	*****	*****	*****	*****	*****	*****
108	129	135	151	161	171	184	188	196	206	*****	*****	*****	*****
109	131	137	157	173	181	199	197	202	213	204	196	*****	*****
110	137	150	167	179	182	197	198	211	216	229	246	248	251

A STRING OF ***** INDICATES NO DATA

TABLE 7-X
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT);
HEXAHYDRO-1,3,5-TRINITRO-,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		X												
		- 300												
TET (MG/KG/DAY)		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
RDX (MG/KG/DAY)		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
TEST WEEK		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
111	128	139	128	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
112	113	129	122	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
113	121	142	127	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
114	120	138	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
115	115	133	132	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
116	118	134	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
117	93	111	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
118	119	150	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
119	113	132	122	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
120	103	120	114	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 7-XI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

XI

TNT (MG/KG/DAY)

RDX (MG/KG/DAY)

TEST

WEEK

ANIMAL

NUMBER

-
600

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
121	122	134	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
122	125	139	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
123	100	109	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
124	100	108	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
125	113	134	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
126	120	130	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
127	120	128	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
128	116	128	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
129	137	152	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
130	113	126	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 7-XII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		XII													
		5													
		30													
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
TEST WEEK															
ANIMAL NUMBER															
131	106	123	140	140	154	173	181	198	212	219	232	232	243	252	258
132	110	127	142	142	160	178	189	202	209	217	230	228	236	249	242
133	144	172	190	190	212	233	243	259	265	272	280	285	294	300	289
134	135	162	175	175	201	218	224	241	254	259	267	269	277	282	267
135	113	135	153	153	170	179	194	208	222	228	238	245	260	263	265
136	119	142	157	157	177	194	199	212	220	232	242	244	250	258	255
137	108	117	140	140	163	180	181	176	204	219	220	194	182	186	202
138	118	144	169	169	189	206	212	231	234	248	256	255	259	272	278
139	132	154	176	176	192	213	223	240	249	258	265	266	280	291	288
140	102	125	136	136	153	173	118	194	201	211	219	219	228	237	242

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO. 1

TABLE 7-XIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER FAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

XIII

TNT (MG/KG/DAY)

5

RDX (MG/KG/DAY)

300

WEIGHT

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER	97	112	118	115	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
141														
142	106	133	143	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
143	114	140	152	140	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
144	100	120	128	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
145	127	148	152	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
146	137	163	170	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
147	117	156	164	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
148	117	142	151	146	140	*****	*****	*****	*****	*****	*****	*****	*****	*****
149	123	145	150	141	145	*****	*****	*****	*****	*****	*****	*****	*****	*****
150	140	163	176	160	156	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 7-XIV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

XIV

TNT (MG/KG/DAY)

RDX (MG/KG/DAY)

TEST

WEEK

(-1)

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

(12)

(13)

ANIMAL
NUMBER

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A STRING OF ***** INDICATES NO DATA

TABLE 7-XV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

XV

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

125
100

TEST
WEEK

(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
103	127	133	138	150	154	165	168	175	187	198	211	217	224
95	119	129	132	144	148	161	166	171	177	183	*****	*****	*****
100	122	128	139	145	147	162	167	168	178	182	190	199	201
148	170	173	180	199	200	214	211	214	218	225	234	247	246
124	141	143	151	156	160	176	176	181	187	192	201	219	210
118	135	141	149	156	163	171	180	191	196	193	206	218	215
112	140	143	143	156	157	147	172	178	187	188	198	209	221
125	154	154	160	166	173	163	186	195	207	206	217	222	222
114	129	130	144	154	158	169	175	183	190	205	220	235	237
114	133	134	142	151	154	164	165	160	172	170	171	183	183

A STRING OF ***** INDICATES NO DATA

TABLE 7-XVI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		XVI												
TNT (MG/KG/DAY)		125												
RDX (MG/KG/DAY)		300												
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
171	134	144	132	129	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
172	99	107	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
173	124	137	128	123	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
174	119	135	122	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
175	114	127	119	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
176	113	129	119	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
177	127	145	121	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
178	112	128	119	115	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
179	103	110	108	109	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
180	128	144	125	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 9-I
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		I													
		-													
		-													
TNT (MG/KG/DAY)		(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
RDX (MG/KG/DAY)															
TEST WEEK															
ANIMAL NUMBER															
181	98	101	109	116	125	130	138	138	136	141	145	153	154	156	159
182	95	113	121	130	136	143	143	144	149	152	158	162	163	164	170
183	114	118	132	141	145	152	152	161	166	169	172	181	180	182	177
184	109	116	130	135	144	147	155	157	163	167	170	175	176	182	178
185	111	122	133	140	148	155	159	159	164	169	170	174	178	183	186
186	98	109	116	123	128	133	133	139	145	146	152	154	157	162	166
187	104	112	132	124	157	163	166	166	175	169	169	181	189	191	180
188	100	109	117	144	133	138	142	142	146	149	152	157	159	160	151
189	103	106	121	128	140	147	152	152	159	160	166	170	173	176	181
190	90	94	108	120	130	134	140	140	146	148	152	159	162	163	165
191	89	103	112	119	130	133	135	135	141	148	152	156	159	159	150
192	96	106	116	122	131	138	143	143	148	155	154	161	162	166	161
193	108	120	127	136	145	149	153	153	158	160	165	171	173	176	179
194	101	118	120	128	135	136	143	143	149	151	157	158	163	165	165
195	96	100	114	122	129	136	138	138	142	148	149	156	159	164	167
196	110	117	140	150	162	166	171	171	177	181	185	188	192	191	197
197	88	95	106	114	124	131	133	133	140	142	147	152	151	155	160
198	93	107	116	127	142	147	156	156	161	160	170	171	173	178	183
199	96	107	116	122	135	141	150	150	151	155	156	164	166	173	165
200	84	106	117	125	137	143	146	146	153	156	162	166	171	169	164
201	86	96	103	110	121	129	124	128	134	137	142	143	148	150	154
202	95	108	115	123	129	131	135	135	140	144	148	155	162	166	173
203	100	115	129	138	154	159	168	168	174	176	177	184	188	190	187
204	110	121	127	134	146	147	155	155	157	160	161	170	173	175	174
205	94	106	113	120	127	133	134	134	141	142	148	154	158	161	148
206	95	108	118	125	130	138	142	142	146	154	155	165	168	167	173
207	110	116	130	139	146	151	156	156	164	167	171	177	182	177	182
208	108	118	128	134	146	153	161	161	165	167	173	179	182	181	187
209	111	121	132	141	148	158	161	161	167	169	174	183	184	187	177
210	97	109	121	132	142	149	155	155	159	167	170	174	174	179	170

A STRING OF ***** INDICATES NO DATA

TABLE 9-II
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		II												
		1												
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)													
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
211	96	102	113	119	124	132	138	144	150	153	156	156	158	167
212	97	112	125	132	138	145	152	159	162	168	173	173	178	179
213	98	105	114	121	130	139	142	146	154	160	162	164	164	155
214	101	113	119	126	135	142	144	154	154	158	162	164	166	159
215	98	113	124	130	143	148	153	161	165	168	174	177	182	174
216	109	122	134	143	153	161	153	173	177	179	187	185	186	177
217	98	109	120	131	144	149	152	157	160	162	164	166	172	178
218	110	119	128	136	144	150	156	159	163	166	171	176	175	182
219	104	116	124	131	146	146	149	157	160	162	168	168	172	173
220	96	104	118	124	133	141	142	148	149	155	162	165	166	168

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 9-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		III												
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	5												
TEST WEEK		-												
	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
221	107	122	136	145	156	167	172	180	182	183	187	189	192	196
222	95	109	120	128	138	145	150	154	155	159	162	166	168	175
223	112	124	135	142	151	157	158	164	170	172	181	179	181	185
224	104	119	134	141	155	166	168	173	178	183	183	186	185	193
225	95	105	114	123	135	140	145	153	155	159	162	163	166	159
226	110	122	131	137	148	155	159	168	172	176	184	185	190	180
227	90	99	108	113	122	127	132	136	138	140	144	146	148	152
228	94	124	117	124	132	141	142	150	152	152	160	163	164	172
229	97	114	122	130	145	152	159	160	165	171	176	180	186	179
230	108	119	125	136	143	150	153	158	159	165	166	170	173	154

A STRING OF ***** INDICATES NO DATA

TABLE 9-IV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		IV													
		25													
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
TEST WEEK															
ANIMAL NUMBER															
231	97	115	128	137	149	153	157	164	166	169	173	179	181	184	
232	109	124	138	145	158	162	172	173	173	178	177	185	185	187	
233	110	123	131	140	145	153	159	164	165	168	174	175	176	168	
234	101	114	121	128	142	147	151	155	158	156	161	162	167	158	
235	95	110	120	131	144	146	150	157	152	156	162	166	170	171	
236	95	110	118	126	137	142	147	151	153	151	157	158	161	168	
237	103	117	124	130	141	152	155	158	160	163	170	170	172	159	
238	101	116	124	133	144	152	155	160	162	162	166	169	170	160	
239	104	112	125	131	138	144	145	151	154	158	165	164	168	171	
240	102	111	125	132	141	149	152	156	162	164	172	175	175	185	

A STRING OF ***** INDICATES NO DATA

TABLE 9-V
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		V													
		125													
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
TEST WEEK															
ANIMAL NUMBER															
241	101	113	115	122	126	128	130	130	129	133	133	140	140	143	147
242	105	121	127	136	140	145	148	148	150	151	152	161	161	165	169
243	96	104	114	121	127	131	135	135	143	145	148	153	156	158	162
244	94	100	106	110	118	122	123	123	129	134	136	142	145	149	156
245	96	107	117	123	133	141	141	141	146	152	156	158	159	162	169
246	100	109	114	118	122	126	127	127	132	135	135	142	142	146	155
247	103	111	118	125	132	138	142	142	149	154	154	153	156	158	163
248	98	97	104	109	114	120	120	120	124	127	130	134	136	137	142
249	113	120	133	140	150	154	153	153	161	163	166	171	167	167	175
250	101	108	118	126	134	139	142	142	147	146	147	153	152	157	158

A STRING OF ***** INDICATES NO DATA

TABLE 9-VI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		VI													
		300													
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
TEST WEEK	ANIMAL NUMBER														
251	102	105	110	115	127	130	130	136	137	141	142	144	147	150	
252	101	105	112	116	124	128	124	133	131	137	141	143	144	147	
253	95	101	108	107	116	122	124	131	133	138	140	144	143	149	
254	105	107	109	116	126	132	130	135	140	144	147	152	152	156	
255	89	96	99	107	113	118	119	123	124	127	132	134	136	128	
256	95	97	102	109	118	124	124	131	130	134	136	138	141	*****	
257	110	113	116	119	131	137	134	139	137	138	145	150	150	153	
258	95	97	100	107	114	118	119	125	123	129	131	134	135	141	
259	107	100	100	112	121	124	124	130	130	135	139	140	140	134	
260	100	107	105	119	131	136	137	144	145	149	154	156	156	148	

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 9-VII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

VII

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)
TEST
WEEK

-
10

(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER													
261	94	100	110	119	126	135	139	146	151	153	158	157	167
262	96	109	121	132	144	149	150	156	162	165	173	172	180
263	100	102	116	121	132	134	138	142	147	151	154	159	161
264	98	105	119	130	141	149	156	162	161	170	175	178	183
265	95	99	113	120	130	139	143	150	153	158	165	172	167
266	95	100	120	129	141	145	153	161	166	170	173	181	171
267	91	104	113	120	132	137	141	145	149	152	160	163	169
268	92	108	117	128	141	145	149	154	156	158	165	167	179
269	105	116	122	130	140	144	147	151	153	158	164	166	169
270	105	114	126	136	145	151	155	161	164	166	174	177	177

A STRING OF ***** INDICATES NO DATA

TABLE 9-VIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAMETHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

VIII

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)-
30

TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
271	185	118	128	135	147	154	159	164	168	171	178	180	182	172
272	187	115	128	136	143	147	152	152	154	157	164	169	172	168
273	97	106	117	123	134	137	141	149	151	156	162	160	164	167
274	98	109	119	125	136	140	145	151	154	158	163	164	167	167
275	94	104	114	122	130	136	143	148	150	150	158	157	162	169
276	112	117	130	138	151	157	165	175	174	175	182	184	188	189
277	90	107	112	117	126	130	134	139	142	145	153	153	153	159
278	100	109	120	130	135	146	151	158	159	163	172	172	180	183
279	101	104	118	133	145	152	156	159	161	164	169	172	175	167
280	93	95	109	120	129	136	144	146	148	151	152	158	159	153

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 9-IX
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

TREATMENT GROUP		FEMALE BODY WEIGHTS (GRAMS)												
IX														
-														
100														
TNT (MG/KG/DAY)		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
RDX (MG/KG/DAY)														
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
281	100	101	104	105	119	120	128	135	142	157	170	176	184	184
282	90	90	97	109	122	132	139	147	151	157	166	172	171	179
283	92	97	101	110	120	125	134	146	146	152	155	158	158	168
284	96	101	102	110	122	127	132	136	136	143	*****	*****	*****	*****
285	107	113	116	120	135	149	155	*****	*****	*****	*****	*****	*****	*****
286	106	107	116	119	131	140	149	153	152	160	166	170	172	166
287	97	103	109	112	128	*****	*****	*****	*****	*****	*****	*****	*****	*****
288	98	100	100	107	123	132	139	142	*****	*****	*****	*****	*****	*****
289	102	108	113	119	125	131	138	157	157	160	*****	*****	*****	*****
290	105	110	114	120	123	134	143	154	161	168	180	176	162	169

A STRING OF ***** INDICATES NO DATA

TABLE 9-X
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

X

TNT (MG/KG/DAY)

300

RDX (MG/KG/DAY)

TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
291	100	105	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
292	105	109	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
293	87	88	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
294	95	99	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
295	102	110	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
296	93	98	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
297	102	105	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
298	115	117	105	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
299	102	108	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
300	100	104	95	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 9-XI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

XI

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)
TEST

-
500

WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
201	95	93	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
302	89	90	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
303	106	109	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
304	102	106	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
305	105	107	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
306	104	106	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
307	97	104	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
308	95	101	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
309	110	116	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
310	101	106	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 9-XII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)
TEST

WEEK
ANIMAL
NUMBER

XII

5
30

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
311	99	104	112	117	128	129	134	139	142	147	152	156	156	162
312	103	114	124	129	137	145	149	155	153	157	162	163	167	171
313	102	113	127	137	148	147	150	156	159	163	168	173	173	177
314	98	93	101	110	120	121	124	130	131	135	134	142	143	146
315	89	96	104	112	123	126	130	132	135	141	145	150	151	140
316	103	116	125	135	144	150	154	158	164	160	172	173	173	163
317	96	109	118	124	134	138	143	148	151	152	159	162	166	171
318	101	108	117	122	130	133	136	143	146	150	153	155	161	162
319	90	105	115	123	130	134	139	147	147	153	152	159	165	165
320	82	112	125	138	149	155	162	170	171	174	179	182	182	175

A STRING OF ***** INDICATES NO DATA

TABLE 9-XIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

XIII

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

5

300

TEST

WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
321	101	103	91	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
322	90	96	83	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
323	86	89	96	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
324	83	85	82	83	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
325	86	88	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
326	104	109	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
327	92	94	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
328	100	104	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
329	97	101	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
330	105	111	102	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 9-XIV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER F341

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP			XIV												
			125												
			30												
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	TEST WEEK	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)

TABLE 9-XV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP

XV

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)125
100

TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
341	85	89	84	99	106	109	112	113	112	113	114	120	124	128
342	106	107	99	110	118	121	123	128	129	128	135	143	143	143
343	108	110	109	116	122	126	133	134	133	137	146	151	154	166
344	105	109	115	117	126	123	128	127	125	131	137	139	140	147
345	104	104	106	109	115	116	119	125	120	132	142	148	154	163
346	100	105	109	113	117	119	127	134	137	145	152	158	164	170
347	103	111	113	117	124	124	128	132	132	137	144	150	*****	*****
348	95	102	102	107	114	114	120	122	122	129	133	138	145	147
349	99	105	108	109	121	122	126	130	131	134	140	145	151	142
350	105	108	110	111	121	120	124	125	125	127	136	142	147	143

A STRING OF ***** INDICATES NO DATA

TABLE 9-XVI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE BODY WEIGHTS (GRAMS)

TREATMENT GROUP		XVI												
TMT (MG/KG/DAY)		125												
RDX (MG/KG/DAY)		388												
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
351	84	93	95	87										
352	86	112	189											
353	118	118	96	96										
354	185	98												
355	183	185	83											
356	183	186												
357	95	98												
358	185	187												
359	97	184	86											
360	182	183												

A STRING OF ***** INDICATES NO DATA

TABLE 11-I
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		I														
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	-														
TEST WEEK		-														
		(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
ANIMAL NUMBER																
1	16	18	19	19	19	19	19	18	19	17	19	18	18	20	16	
2	16	18	19	19	19	19	19	18	19	17	19	18	18	20	16	
3	14	16	18	17	18	18	17	16	13	18	18	18	18	20	21	
4	14	16	17	14	18	18	17	16	18	18	18	18	18	20	21	
5	15	16	18	18	18	19	19	19	22	18	17	18	18	19	17	
6	15	16	18	15	18	18	19	19	22	18	17	18	18	19	17	
7	15	16	16	18	18	18	18	18	22	18	18	18	18	19	20	
8	15	16	17	18	18	18	19	18	22	18	18	18	18	19	20	
9	14	15	15	16	15	16	17	17	17	16	17	17	17	17	20	
10	14	15	15	16	15	16	17	17	17	16	17	17	17	17	20	
11	16	17	18	18	18	19	19	13	18	18	18	19	19	19	18	
12	16	17	18	18	18	19	19	18	18	18	18	19	19	19	18	
13	15	16	17	17	18	18	17	16	18	17	17	18	18	17	18	
14	15	16	17	18	18	18	17	16	18	17	17	18	18	17	18	
15	18	17	18	18	18	19	19	18	18	17	19	18	18	19	21	
16	18	17	18	18	18	19	19	18	19	17	19	18	18	19	21	
17	15	15	16	16	16	16	17	16	18	15	15	16	17	18	17	
18	15	15	16	16	16	16	17	16	18	15	15	16	17	18	17	
19	14	16	16	16	16	17	17	17	19	17	18	17	17	18	19	
20	14	16	16	16	16	17	17	17	19	17	18	17	17	18	15	
21	17	17	18	16	16	17	18	18	18	17	18	17	17	18	20	
22	17	17	18	18	17	19	18	18	18	17	17	17	17	18	20	
23	14	15	16	17	17	17	17	17	20	17	17	17	18	18	15	
24	14	15	16	16	17	17	17	17	20	17	17	18	18	18	15	
25	16	16	18	18	18	19	19	19	19	18	19	20	18	18	19	
26	16	16	18	18	18	19	19	19	19	18	19	20	18	18	19	
27	14	15	16	16	17	17	17	13	17	17	17	18	18	18	19	
28	14	15	15	16	17	17	17	18	17	17	17	18	18	18	19	
29	15	16	16	16	17	18	16	16	19	18	18	18	18	18	18	
30	15	16	16	16	17	18	17	16	19	18	18	18	17	18	18	

A STRING OF ***** INDICATES NO DATA

TABLE 11-II

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

II

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

1

TEST

WEEK

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER												
31	16	17	18	18	17	17	18	19	17	17	19	20
32	16	17	18	18	17	17	18	19	17	17	19	20
33	14	17	18	18	17	19	18	18	15	18	19	18
34	14	17	18	18	17	19	18	18	16	18	19	18
35	15	13	16	18	18	18	18	18	19	19	19	19
36	15	13	16	18	18	18	18	18	19	19	19	19
37	15	15	16	17	16	18	17	17	18	17	18	16
38	15	15	16	17	16	18	17	17	18	17	18	16
39	15	16	16	17	16	17	17	17	19	18	19	22
40	15	16	16	17	16	17	17	17	19	15	19	22

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 11-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

III

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

5

TEST
WEEK

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
41	15	16	17	16	16	16	16	18	16	17	17	18	18	16
42	15	16	17	16	16	16	16	18	16	17	17	18	18	16
43	15	15	17	16	16	17	17	16	16	16	15	17	18	20
44	15	15	17	16	16	17	17	16	16	16	15	17	18	20
45	16	16	16	18	18	18	19	20	18	18	19	18	19	20
46	16	16	16	18	18	18	19	20	18	18	19	18	19	20
47	15	15	17	17	18	18	17	18	17	16	18	17	17	21
48	15	15	17	17	18	18	17	18	17	16	18	17	17	21
49	13	14	14	16	17	17	18	18	16	17	17	17	18	20
50	13	14	14	16	17	17	18	18	16	17	17	17	18	20

A STRING OF ***** INDICATES NO DATA

TABLE 11-IV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		IV												
TNT (MG/KG/DAY)		25												
RDX (MG/KG/DAY)		-												
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
51	9	16	17	18	18	19	18	18	18	18	17	18	18	21
52	9	16	17	18	18	19	18	18	18	18	17	18	18	21
53	16	16	14	18	18	18	17	17	17	18	17	18	18	19
54	16	16	14	18	18	19	17	17	17	18	17	18	18	19
55	15	16	18	18	18	18	17	18	16	17	17	18	18	20
56	15	16	18	18	18	18	17	18	16	17	17	18	18	20
57	14	15	15	15	16	16	15	16	16	16	16	16	17	16
58	14	15	15	15	16	16	15	16	16	16	16	15	17	16
59	16	16	17	17	18	18	16	18	17	17	19	17	17	20
60	16	16	17	17	18	18	16	18	17	17	19	17	17	20

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 11-V
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		V													
		125													
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
TEST WEEK															
ANIMAL NUMBER															
61	15	13	15	17	17	17	16	18	15	15	16	16	17	18	
62	15	13	15	17	17	17	16	18	15	15	16	16	17	18	
63	16	13	14	15	16	16	16	17	15	16	15	16	16	17	
64	16	13	14	15	16	16	16	17	15	16	15	16	16	17	
65	15	14	16	18	16	15	16	16	15	15	17	16	15	15	
66	15	14	16	18	16	16	16	16	15	15	17	16	15	15	
67	16	15	17	19	18	18	17	16	14	17	16	17	17	19	
68	16	15	17	19	18	18	17	16	14	17	16	17	17	19	
69	17	14	17	17	18	17	17	16	15	16	16	18	18	18	
70	17	14	17	17	18	17	17	16	15	16	16	18	18	18	

A STRING OF ***** INDICATES NO DATA

TABLE 11-VI

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

VI

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

300

TEST
WEEK

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
71	14	8	14	12	14	12	12	13	12	12	12	12	13	13
72	14	8	14	12	14	12	12	13	12	12	12	12	13	13
73	15	8	16	17	15	14	14	13	13	13	13	13	14	16
74	15	8	16	17	15	14	14	13	13	13	13	13	14	16
75	15	8	16	14	15	15	14	16	15	14	14	14	14	15
76	15	8	16	14	15	15	14	16	15	14	14	14	14	15
77	15	7	16	16	16	14	13	17	15	14	15	16	14	15
78	15	7	16	16	16	14	13	17	15	14	15	16	14	15
79	16	8	17	14	17	14	15	14	14	14	14	14	14	15
80	16	8	17	14	17	14	15	14	14	14	14	14	14	15

A STRING OF ***** INDICATES NO DATA

TABLE 11-VII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TPIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

VII

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

-
10

TEST

WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
81	15	16	16	17	18	18	18	18	18	18	19	19	19	21
82	15	16	16	17	18	18	18	18	18	18	19	19	19	21
83	13	15	14	15	15	16	16	18	15	16	17	17	18	18
84	13	15	14	15	15	16	16	18	15	16	17	17	18	18
85	15	15	16	17	19	19	19	20	18	19	20	20	21	20
86	15	15	16	17	19	19	19	20	18	19	20	20	21	20
87	15	16	17	18	18	17	18	19	18	18	20	20	20	20
88	15	16	17	18	18	17	18	19	18	18	20	20	20	20
89	14	15	16	16	17	17	17	19	18	18	17	18	19	16
90	14	15	16	16	17	17	17	19	18	18	17	18	19	16

A STRING OF ***** INDICATES NO DATA

TABLE 11-VIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

TEST

WEEK

(-1)

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

(12)

(13)

ANIMAL
NUMBER

91

15

14

15

15

15

15

15

18

16

17

16

17

17

21

92

15

14

15

15

15

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93

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19

99

15

16

16

16

19

19

16

19

18

18

19

18

19

22

100

15

16

16

19

19

16

19

18

18

18

19

18

19

22

A STRING OF ***** INDICATES NO DATA

TABLE 11-IX
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

IX

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)
TEST

-
100

WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
101	15	11	14	16	15	13	13	16	12	11	11	*****	*****	*****
102	15	11	14	16	15	13	*****	*****	*****	*****	*****	*****	*****	*****
103	17	13	17	11	16	14	14	15	15	*****	*****	*****	*****	*****
104	17	13	17	11	16	14	14	15	15	17	16	17	17	16
105	14	9	13	12	14	12	13	13	*****	*****	*****	*****	*****	*****
106	14	9	13	12	14	12	13	13	12	*****	*****	*****	*****	*****
107	17	10	13	13	14	*****	*****	*****	*****	*****	*****	*****	*****	*****
108	17	10	13	13	14	14	15	14	13	12	*****	*****	*****	*****
109	16	10	14	14	15	14	14	13	14	14	14	15	*****	*****
110	16	10	14	14	15	14	14	13	14	14	14	14	18	17

A STRING OF ***** INDICATES NO DATA

TABLE 11-X

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

X

TNT (MG/KG/DAY)

-

RDX (MG/KG/DAY)

300

TEST

WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
111	15	6	11	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
112	15	6	11	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
113	16	5	12	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
114	16	5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
115	15	6	13	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
116	15	6	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
117	22	4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
118	22	4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
119	15	6	12	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
120	15	6	12	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 11-XI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

XI

TNT (MG/KG/DAY)

RDX (MG/KG/DAY)

TEST

-
600

WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER															
121	16	2	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
122	16	2	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
123	14	2	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
124	14	2	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
125	16	3	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
126	16	3	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
127	14	3	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
128	14	3	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
129	15	2	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
130	15	2	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 11-XII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

XII

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)
TEST

5
30

WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
131	13	13	15	15	16	14	16	17	15	16	16	17	18	22
132	13	13	15	15	16	14	16	17	15	16	16	17	18	22
133	17	16	17	18	18	18	18	18	17	18	18	18	20	21
134	17	16	17	18	18	18	18	18	17	13	18	18	20	21
135	15	14	15	14	16	15	15	17	15	15	15	16	17	19
136	15	14	15	14	16	15	15	17	15	15	15	16	17	19
137	20	12	16	17	16	13	15	18	16	14	12	14	16	14
138	20	12	16	17	16	13	15	18	16	14	12	14	16	14
139	15	13	15	16	17	16	16	17	17	17	16	16	17	16
140	15	13	15	16	17	16	16	17	17	17	16	16	17	16

A STRING OF ***** INDICATES NO DATA

TABLE 11-XIII
 THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
 MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		XIII											
TMT (MG/KG/DAY)		5											
RDX (MG/KG/DAY)		300											
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ANIMAL NUMBER													
141	13	13	6	9	*****	*****	*****	*****	*****	*****	*****	*****	*****
142	13	13	6	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
143	15	14	6	24	*****	*****	*****	*****	*****	*****	*****	*****	*****
144	15	14	6	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
145	16	16	9	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
146	16	16	9	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
147	16	15	8	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
148	16	15	8	12	11	*****	*****	*****	*****	*****	*****	*****	*****
149	16	16	8	12	7	*****	*****	*****	*****	*****	*****	*****	*****
150	16	16	8	12	7	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 11-XIV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		XIV												
TNT (MG/KG/DAY)		125												
RDX (MG/KG/DAY)		30												
TEST WEEK		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
151	15	13	17	14	14	14	16	16	15	15	15	15	15	15
152	15	13	17	14	14	14	16	16	15	15	15	15	15	15
153	14	12	15	14	13	13	13	14	13	14	20	14	16	20
154	14	12	15	14	13	13	13	14	13	14	20	14	16	20
155	14	12	15	21	14	14	14	15	13	15	16	15	17	15
156	14	12	15	21	14	14	14	15	13	15	16	15	17	15
157	14	14	17	16	16	16	16	18	16	16	16	16	18	20
158	14	14	17	16	16	16	16	18	16	16	16	16	18	20
159	16	13	8	14	14	15	14	14	13	14	14	15	16	16
160	16	13	8	14	14	15	14	14	13	14	14	15	16	16

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 11-XV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		XV													
		125													
		130													
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
TEST WEEK															
ANIMAL NUMBER															
161	14	10	13	11	14	14	12	12	12	14	14	15	16	21	17
162	14	10	13	11	14	14	12	12	12	14	14	15	*****	*****	*****
163	15	10	14	12	14	14	12	13	14	15	13	13	14	14	16
164	15	10	14	12	14	14	12	13	14	15	13	13	14	14	16
165	15	10	16	11	13	13	12	13	13	12	11	14	16	16	16
166	15	10	16	11	13	13	12	13	13	12	11	14	16	16	16
167	15	10	11	14	13	13	13	12	13	13	13	13	13	13	14
168	15	10	11	14	13	13	13	12	13	13	13	13	13	13	14
169	14	10	14	12	13	13	12	12	13	12	13	13	14	15	13
170	14	10	14	12	13	13	12	12	13	12	13	13	14	15	13

A STRING OF ***** INDICATES NO DATA

TABLE 11-XVI

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

MALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		XVI												
TNT (MG/KG/DAY)		125												
RDX (MG/KG/DAY)		300												
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
171	14	5	6	12	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
172	14	5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
173	15	6	10	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
174	15	6	10	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
175	14	6	10	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
176	14	6	10	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
177	15	5	10	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
178	15	5	10	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
179	15	10	11	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
180	15	10	11	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 12-1
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
FEMALE FOOD CONSUMPTION (GRAMS)

I														
-														
-														
TREATMENT GROUP	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
TNT (MG/KG/DAY)														
RDX (MG/KG/DAY)														
TEST WEEK														
FINAL WEIGHT														
182	12	11	11	12	11	11	10	10	11	11	11	11	10	11
183	12	11	11	12	11	11	10	10	11	11	11	11	10	11
184	13	12	12	12	12	12	12	12	11	11	13	12	12	13
185	13	12	12	12	12	12	12	14	11	11	12	12	12	13
186	13	12	12	11	11	12	12	14	11	11	12	12	12	12
187	13	12	12	10	12	11	11	11	10	12	12	12	11	13
188	13	12	12	10	12	11	11	11	10	12	12	12	11	13
189	11	11	11	12	11	12	10	11	11	11	12	12	11	13
190	11	11	11	12	11	12	10	11	11	11	12	11	11	12
191	11	12	12	11	11	11	11	10	11	11	12	11	11	10
192	11	12	12	11	11	11	11	10	11	11	11	10	11	10
193	12	11	11	11	10	11	11	10	10	11	11	11	11	10
194	12	11	11	11	10	11	11	10	10	11	11	11	10	13
195	12	11	12	12	12	11	11	10	10	11	11	11	10	13
196	12	11	12	12	12	16	11	11	12	12	12	12	12	12
197	12	11	12	12	12	16	11	11	12	12	12	12	12	12
198	12	11	11	11	12	12	11	11	12	12	12	12	12	12
199	14	11	12	11	12	12	11	11	12	12	12	12	12	12
200	14	11	12	11	12	12	11	10	11	11	11	12	11	12
201	12	11	12	11	11	11	11	10	10	11	12	12	11	12
202	12	11	12	11	11	11	11	10	10	11	12	12	11	10
203	13	12	12	13	12	12	12	12	10	11	12	12	11	10
204	13	12	12	13	12	12	12	12	11	11	12	12	12	14
205	12	12	12	11	11	10	10	12	11	11	12	12	10	11
206	12	12	11	11	11	10	10	12	11	11	12	12	10	11
207	12	12	13	12	12	13	12	12	12	12	12	12	11	11
208	12	12	13	12	12	13	12	12	12	12	12	12	11	11
209	13	13	13	12	12	13	12	12	12	12	12	12	11	11
210	13	13	13	12	12	13	12	12	12	12	13	12	12	12

A STRING OF ***** INDICATES NO DATA

TABLE 12-II
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		II													
		1													
		-													
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
TEST WEEK	ANIMAL NUMBER														
211	12	11	12	12	11	11	13	11	11	11	11	10	11	11	11
212	12	11	12	12	11	11	13	11	11	11	11	10	11	11	11
213	12	12	12	12	12	11	12	12	12	12	11	12	12	11	11
214	12	12	12	12	12	11	12	12	12	12	11	12	12	11	11
215	13	11	13	13	12	12	13	12	13	12	13	13	13	13	12
216	13	11	13	13	12	12	13	12	13	12	13	13	13	13	12
217	11	13	12	12	12	12	13	11	11	12	11	12	12	12	11
218	11	13	12	12	12	12	13	11	11	12	11	12	12	12	11
219	12	11	12	12	12	12	12	11	11	11	11	12	12	11	11
220	12	11	12	12	12	12	12	11	11	11	11	12	12	11	11

A STRING OF ***** INDICATES NO DATA

TABLE 12-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

5

TEST
WEEK

III

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
221	12	12	12	12	12	13	12	11	12	12	13	13	12	12
222	12	12	12	12	12	13	12	11	12	12	13	13	12	12
223	13	14	13	13	13	14	13	12	13	12	13	12	12	13
224	13	14	13	13	13	14	13	12	13	12	13	12	12	13
225	12	12	13	12	11	13	12	12	12	12	12	12	13	13
226	12	12	13	12	11	13	12	12	12	12	12	12	13	13
227	11	11	11	11	11	12	10	11	10	11	11	11	10	11
228	11	11	11	11	11	12	10	11	10	11	11	11	10	11
229	12	12	12	12	12	13	12	11	11	11	12	12	12	8
230	12	12	12	12	12	13	12	11	11	11	12	12	12	8

A STRING OF ***** INDICATES NO DATA

TABLE 12-IV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		IV												
TNT (MG/KG/DAY)		25												
RDX (MG/KG/DAY)		-												
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
231	13	13	14	13	12	13	13	11	11	12	12	13	11	12
232	13	13	14	13	12	13	13	11	11	12	12	13	11	12
233	13	13	12	13	13	13	11	11	12	11	12	11	11	14
234	13	13	12	13	13	13	11	11	12	11	12	11	11	14
235	12	12	12	12	15	13	11	11	11	11	12	11	12	13
236	12	13	12	12	15	13	11	11	11	11	12	11	12	13
237	12	12	12	12	11	13	11	11	12	11	11	12	11	8
238	12	12	12	12	11	13	11	11	12	11	11	12	11	8
239	13	10	12	10	11	12	11	11	12	12	12	11	12	12
240	13	10	12	10	11	12	11	11	12	12	12	11	12	12

A STRING OF ***** INDICATES NO DATA

TABLE 12-V
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		V												
TNT (MG/KG/DAY)		125												
RDX (MG/KG/DAY)		-												
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
241	13	13	12	12	10	11	10	9	9	9	10	10	10	10
242	13	13	12	12	10	11	10	9	9	9	10	10	10	10
243	13	11	11	10	9	10	9	9	10	9	10	10	10	8
244	13	11	11	10	9	10	9	9	10	9	10	10	10	8
245	12	13	11	11	9	11	10	10	9	9	10	10	10	9
246	12	13	11	11	9	11	10	10	9	9	10	10	10	9
247	11	11	11	10	10	12	10	9	10	9	10	10	10	9
248	11	11	11	10	10	12	10	9	10	9	10	10	10	9
249	12	11	11	10	10	12	11	10	10	10	10	10	11	7
250	12	11	11	10	10	12	11	10	10	10	10	10	11	7

A STRING OF ***** INDICATES NO DATA

TABLE 12-VI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

VI

TNT (MG/KG/DAY)

RDX (MG/KG/DAY)

TEST WEEK

(-1)

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

(12)

(13)

ANIMAL
NUMBER

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L6116/L6121, STUDY NO.1

TABLE 12-VII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
FEMALE FOOD CONSUMPTION - (GRAMS)

TREATMENT GROUP

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

TEST

WEEK

(-1)

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

(12)

(13)

ANIMAL

NUMBER

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TABLE 12-VIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

VIII

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

-
30

TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
271	13	12	13	13	12	13	11	12	11	12	13	12	12	11
272	13	12	13	13	12	13	11	12	11	12	13	12	12	11
273	12	11	12	11	12	12	11	11	11	11	11	11	11	12
274	12	11	12	11	12	12	11	11	11	11	11	11	11	12
275	13	11	12	12	12	14	12	12	12	12	15	12	14	13
276	13	11	12	12	12	14	12	12	12	12	15	12	14	13
277	12	11	12	11	11	12	11	11	10	11	11	11	12	12
278	12	11	12	11	11	12	11	11	10	11	11	11	12	12
279	12	11	11	12	12	14	11	11	11	11	11	11	11	11
280	12	11	11	12	12	14	11	11	11	11	11	11	11	11

A STRING OF ***** INDICATES NO DATA

TABLE 12-IX
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		IX													
TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST WEEK		- 100													
(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)		
281	11	8	10	9	11	11	11	11	11	12	11	12	11		
282	11	8	10	9	11	11	11	11	11	12	11	12	11		
283	13	8	11	10	11	11	12	11	12	12	12	13	14		
284	13	8	11	10	11	11	12	11	12	*****	*****	*****	*****		
285	13	8	11	10	13	12	*****	*****	*****	*****	*****	*****	*****		
286	13	8	11	10	13	12	11	11	9	10	11	11	13		
287	12	8	11	10	*****	*****	*****	*****	*****	*****	*****	*****	*****		
288	12	8	11	10	12	10	9	*****	*****	*****	*****	*****	*****		
289	13	8	11	10	11	12	12	11	14	*****	*****	*****	*****		
290	13	8	11	10	11	12	12	11	14	12	7	13	13		

A STRING OF ***** INDICATES NO DATA

TABLE 12-X
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

X

TNT (MG/KG/DAY)

RDX (MG/KG/DAY)

TEST

WEEK

300

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
291	12	3	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
292	12	3	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
293	12	6	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
294	12	6	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
295	13	5	6	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
296	13	5	6	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
297	13	4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
298	13	4	7	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
299	12	3	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
300	12	3	8	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO. 1

TABLE 12-XI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		XI														
		-														
		60g														
TNT (MG/KG/DAY)	PDX (MG/KG/DAY)	TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER																
301	11	2														
302	11	2														
303	13	2														
304	13	2														
305	12	3														
306	12	3														
307	12	2														
308	12	2														
309	13	3														
310	13	3														

A STRING OF ***** INDICATES NO DATA

TABLE 12-XII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		XII												
TNT (MG/KG/DAY)		5												
RDX (MG/KG/DAY)		30												
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
311	12	11	13	11	12	12	11	11	11	11	12	11	12	11
312	12	11	13	11	12	12	11	11	11	11	12	11	12	11
313	12	10	12	12	11	12	11	11	11	11	12	11	12	11
314	12	10	12	12	11	12	11	11	11	11	12	11	12	11
315	12	11	11	11	11	12	11	11	11	11	12	12	11	12
316	12	11	11	11	11	12	11	11	11	11	12	12	11	12
317	13	12	12	12	11	12	11	11	11	11	12	12	12	11
318	13	12	12	12	11	12	11	11	11	11	12	12	12	11
319	14	12	13	11	11	12	11	11	12	12	12	12	13	13
320	14	12	13	11	11	12	11	11	12	12	12	12	13	13

A STRING OF ***** INDICATES NO DATA

TABLE 12-XIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

XIII

TNT (MG/KG/DAY)

5

RDX (MG/KG/DAY)

300

TEST WEEK

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
321	12	4	10	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
322	12	4	10	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
323	11	5	7	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
324	11	5	7	6	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
325	12	4	3	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
326	12	4	3	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
327	11	4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
328	11	4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
329	12	4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
330	12	4	9	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		XIV												
TNT (MG/KG/DAY)		125												
RDX (MG/KG/DAY)		30												
TEST		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL														
NUMBER														
331	12	9	11	9	9	10	9	10	9	10	10	10	10	9
332	12	9	11	9	9	10	9	10	9	10	10	10	10	9
333	12	10	12	10	9	10	9	9	9	10	11	10	10	11
334	12	10	12	10	9	10	9	9	9	10	11	10	10	11
335	12	10	12	9	10	10	9	9	8	9	10	10	9	13
336	12	10	12	9	10	10	9	9	8	9	10	10	9	13
337	13	9	11	9	9	10	9	9	8	8	10	9	9	8
338	13	9	11	9	9	10	9	9	8	8	10	9	9	8
339	12	10	12	10	10	11	10	10	9	9	10	10	11	10
340	12	10	12	10	10	11	10	10	9	9	10	10	11	10

A STRING OF ***** INDICATES NO DATA

TABLE 12-XV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP		XV														
TNT (MG/KG/DAY)		125														
RDX (MG/KG/DAY)		100														
TEST WEEK	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)		
ANIMAL NUMBER																
341	12	3	12	9	10	10	9	8	9	8	10	11	9	8		
342	12	3	12	9	10	10	9	8	9	8	10	11	9	8		
343	12	9	13	10	11	11	10	9	9	10	10	10	12	10		
344	12	9	13	10	11	11	10	9	9	10	10	10	12	10		
345	11	8	11	9	9	10	9	11	10	11	11	10	13	11		
346	11	8	11	9	9	10	9	11	10	11	11	10	13	11		
347	13	9	10	9	10	10	9	9	9	10	10	11	*****	*****		
348	13	9	10	9	10	10	9	9	9	10	10	11	10	12		
349	12	10	10	9	10	11	9	9	9	10	10	10	13	14		
350	12	10	10	9	10	11	9	9	9	10	10	10	13	14		

A STRING OF ***** INDICATES NO DATA

TABLE 12-XVI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

FEMALE FOOD CONSUMPTION (GRAMS)

TREATMENT GROUP

TNT (MG/KG/DAY)
RDX (MG/KG/DAY)

TEST

WEEK

	(-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ANIMAL NUMBER														
351	14	8	7	13	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
352	14	8	7	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
353	12	5	13	5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
354	12	5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
355	13	4	10	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
356	13	5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
357	12	5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
358	12	5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
359	12	5	7	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
360	12	5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 13-I
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	I														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HEMATOCRIT (%)	42.24	42.24	*****	*****	37.10	42.02	42.02	42.91	45.59	44.70	42.91	40.00	42.46	41.10	41.57
HEMOGLOBIN (G%)	16.27	16.32	*****	*****	14.10	16.38	16.08	16.02	16.50	16.38	16.11	16.05	15.87	16.10	16.21
WETGCR (G%)	.49	.67	*****	*****	.43	.61	.24	.74	.49	.61	.43	.49	.67	.00	.55
% METHGB	2.92	3.94	*****	*****	2.96	3.59	1.47	4.41	2.30	3.59	2.60	2.96	4.05	4.70	3.20
ERYTHROCYTES (10 ⁶ /MM ³)	9.72	8.56	*****	*****	7.69	8.72	8.49	8.72	9.32	9.07	8.76	8.56	8.76	8.40	3.40
MCV (10 X 10 ³)	48.00	49.00	*****	*****	48.00	48.00	49.00	49.00	48.00	49.00	49.00	48.00	48.00	43.70	50.00
MCH (UG)	19.60	20.10	*****	*****	19.20	19.80	19.60	19.70	18.60	19.10	19.20	19.60	19.30	20.40	19.80
MCPC (G%)	40.50	41.10	*****	*****	39.90	41.20	39.80	40.00	38.20	39.00	39.60	41.20	40.10	42.10	41.00
NRBC (%WBC)	.00	.00	*****	*****	2.00	1.00	.00	.00	.00	1.00	.00	.00	3.00	1.00	2.00
RETICULOCYTES (%RBC)	1.50	.60	*****	*****	.90	1.10	1.80	1.10	.90	3.00	.90	.90	.70	.50	1.40
LEUCOCYTES (10 ⁶ /MM ³)	7.60	8.05	*****	*****	9.16	8.94	9.39	8.40	8.49	8.05	9.16	7.02	9.39	9.01	9.33
LYMPHOCYTES (%WBC)	76.00	90.00	*****	*****	25.00	84.00	72.00	75.00	76.00	81.00	77.00	90.00	87.00	92.00	77.00
MONOCYTES (%WBC)	.00	.00	*****	*****	1.00	1.00	4.00	.00	1.00	.00	3.00	.00	.00	1.00	.00
EOSINOPHILS (%WBC)	.00	2.00	*****	*****	1.00	2.00	.00	1.00	.00	2.00	3.00	2.00	.00	4.00	1.00
BASOPHILS (%WBC)	.00	.00	*****	*****	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PLT. NEUTROPHILS (%WBC)	24.00	8.00	*****	*****	73.00	13.00	23.00	24.00	23.00	17.00	17.00	8.00	13.00	13.00	23.00
IMM. NEUTROPHILS (%WBC)	.00	.00	*****	*****	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 13-1 (CON'T)
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	I									
	16	17	18	19	20	21	22	23	24	25
HEMATOCRIT (%)	46.93	44.92	44.70	44.70	46.26	47.38	45.23	45.15	35.09	42.91
HEMOGLOBIN (G%)	17.23	15.98	16.17	17.54	17.33	17.51	14.77	16.63	12.29	16.11
METHGB (G%)	.43	1.23	.37	.12	.55	.37	.43	.80	.67	.43
W. MTHGB	2.44	7.15	2.24	.68	3.08	2.07	2.83	4.59	5.17	2.60
ERYTHROCYTES (X 10 ⁶ /MM ³)	9.45	9.16	9.21	9.16	9.34	9.82	8.22	9.39	7.33	8.54
PCV (X 10 ³)	50.00	49.00	49.00	49.00	50.00	48.00	49.00	48.00	47.00	50.00
MCV (FUG)	13.00	13.20	12.50	19.60	19.40	18.60	18.90	18.80	17.80	19.30
MCCH (G%)	33.40	37.90	40.00	39.30	38.80	38.70	39.40	39.60	38.90	38.60
MPCC (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PLTICULOCYTES (%WBC)	2.10	1.10	1.70	.60	1.30	1.20	3.40	2.20	1.70	1.10
LEUCOCYTES (X 10 ³ /MM ³)	11.18	3.49	7.60	7.15	9.83	9.16	8.05	7.82	8.49	9.83
LYMPHOCYTES (%WBC)	77.00	84.00	70.00	86.00	79.00	80.00	95.00	76.00	64.00	82.00
MONOCYTES (%WBC)	3.00	.00	1.00	.00	.00	.00	.00	1.00	.00	.00
EOSINOPHILS (%WBC)	2.00	1.00	1.00	3.00	7.00	2.00	.00	2.00	2.00	1.00
BASOPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAF. NEUTROPHILS (%WBC)	18.00	15.00	28.00	11.00	14.00	18.00	5.00	22.00	34.00	17.00
IMM. NEUTROPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 13-II
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAMETHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

L6116/L6121, STUDY NO. 1

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL	II									
	31	32	33	34	35	36	37	38	39	40
HEMATOCRIT (%)	48.68	48.28	42.46	43.36	42.46	42.02	38.44	42.02	44.70	44.25
HEMOGLOBIN (G%)	16.02	18.28	15.68	16.30	17.23	15.58	14.14	17.88	16.39	15.82
METHGB (G%)	.74	.49	.86	.24	.43	.74	.61	.02	.37	1.17
% METHGB	4.41	2.61	5.20	1.45	2.44	4.54	4.14	.00	2.21	6.89
ERYTHROCYTES (10 ⁶ /MM ³)	8.45	10.64	8.92	8.92	8.85	8.67	8.18	8.63	9.30	9.21
PCV (0 X 10 ³)	48.00	46.00	48.00	50.00	48.00	48.00	46.00	48.00	48.00	48.00
PCV (UUG)	20.10	18.00	18.70	19.20	20.30	19.20	18.60	21.10	18.60	18.60
MCBC (G%)	41.80	39.60	39.40	38.80	42.20	39.80	39.60	43.60	38.10	38.00
NRBC (%WBC)	.00	2.00	.00	*****	1.00	.00	2.00	2.00	3.00	.00
RETICULOCYTES (%RBC)	.00	1.40	2.60	.00	1.40	.00	3.50	1.20	2.40	1.00
LEUCOCYTES (10 ³ /MM ³)	9.39	8.94	6.26	9.39	9.61	9.83	10.73	9.49	9.49	9.83
LYMPHOCYTES (%WBC)	83.00	86.00	44.00	*****	93.00	71.00	38.00	87.00	82.00	97.00
MONOCYTES (%WBC)	.00	1.00	1.00	*****	.00	.00	.00	.00	.00	.00
EOSINOPHILS (%WBC)	1.00	1.00	1.00	*****	1.00	1.00	1.00	2.00	.00	.00
BASOPHILS (%WBC)	.00	.00	.00	*****	.00	.00	.00	.00	.00	.00
PLT. NEUTROPHILS (%WBC)	16.00	12.00	54.00	*****	6.00	12.00	61.00	11.00	18.00	3.00
PLT. NEUTROPHILS (%WBC)	.00	.00	.00	*****	.00	.00	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 13-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP		III							
TNT (MG/KG/DAY)		5							
PDX (MG/KG/DAY)									
TEST ANIMAL									
NUMBER		42	43	44	45	46	47	48	50
HEMATOCRIT		45.82	41.57	44.25	43.36	44.83	38.89	44.78	44.78
HEMOGLOBIN		17.73	15.83	17.82	15.65	16.68	14.81	15.52	16.82
HEMGB		.37	.49	.86	.67	.61	.74	.88	.61
% METHGB		2.84	3.88	4.81	4.11	3.54	5.82	4.98	3.58
ERYTHROCYTES		9.39	8.63	9.34	9.19	9.52	8.85	9.25	9.36
MCV		(U X 10 ³)	49.88	48.88	47.88	46.88	48.88	48.88	48.88
MCH		(UG)	19.68	18.68	19.48	18.18	18.58	18.88	19.88
MCHC		(G%)	48.32	39.88	48.88	38.48	39.28	38.58	39.48
NRBC		(%WBC)	.88	.88	.88	2.88	.88	2.88	.88
RETICULOCYTES		(%RBC)	1.88	1.28	1.18	1.18	.98	1.98	1.18
LEUCOCYTES		(10 ³ / MM ³)	8.85	8.49	8.94	9.16	7.82	8.85	7.15
LYMPHOCYTES		(%WBC)	76.88	65.88	74.88	66.88	81.88	82.88	66.88
MONOCYTES		(%WBC)	.88	3.88	1.88	1.88	.88	.88	2.88
EOSINOPHILS		(%WBC)	.88	3.88	.88	3.88	2.88	.88	.88
BASOPHILS		(%WBC)	.88	.88	.88	.88	.88	.88	.88
%AT. NEUTROPHILS		24.88	29.88	25.88	38.88	16.88	18.88	24.88	32.88
%MM. NEUTROPHILS		(%WBC)	.88	.88	.88	.88	.88	.88	.88

A STRING OF ***** INDICATES NO DATA

TABLE 13-IV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	51	52	53	54	55	56	57	58	59	60
HEMATOCRIT (%)	48.45	43.81	41.12	28.61	37.55	32.63	32.18	40.23	42.02	42.45
HEMOGLOBIN (G%)	14.75	16.25	15.07	9.81	12.92	11.13	11.64	15.52	15.23	15.20
METHGB (G%)	.67	.74	.80	.92	.49	.49	.43	.80	.86	.48
% METHGB	4.34	4.36	5.04	8.58	3.65	4.22	3.56	4.90	5.34	3.00
ERYTHROCYTES 10 ⁶ /MM ³	8.31	9.10	8.72	5.08	7.44	6.48	7.02	8.36	8.83	9.16
MCV FV X 10 ³	48.80	48.80	47.00	46.00	50.00	50.00	46.00	48.00	47.00	46.00
CH (DUG)	18.80	18.90	18.60	18.10	18.40	18.60	17.80	19.90	19.40	17.70
MCBC (G%)	38.80	39.40	39.40	38.90	36.60	37.00	38.60	41.60	38.80	38.20
NRBC (%WBC)	1.00	.00	.00	.00	.00	1.00	.00	1.00	.00	.00
RETICULOCYTES (%RBC)	1.70	1.90	1.10	1.50	*****	2.80	2.00	1.20	1.50	3.30
LEUCOCYTES (10 ³ /MM ³)	8.94	7.60	8.49	8.27	8.49	9.83	9.61	8.49	8.05	10.06
LYMPHOCYTES (%WBC)	70.00	85.00	68.00	43.00	77.00	51.00	66.00	84.00	77.00	79.00
MONOCYTES (%WBC)	.00	.00	.00	1.00	.00	.00	.00	.00	.00	.00
EOSINOPHILS (%WBC)	3.00	2.00	1.00	.00	1.00	.00	1.00	3.00	1.00	.00
BASOPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
%T. NEUTROPHILS (%WBC)	27.00	13.00	31.00	56.00	22.00	49.00	33.00	13.00	22.00	21.00
IMM. NEUTROPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 13-V
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAMETHO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) PDX (MG/KG/DAY) TEST ANIMAL NUMBER	V						
	61	62	63	64	65	66	67
HEMATOCRIT (%)	48.23	37.77	36.88	36.88	39.78	36.65	37.99
HEMOGLOBIN (G%)	14.32	13.43	13.28	13.69	13.44	13.25	13.34
METHGB (G%)	.43	.43	.88	.61	.86	.61	.74
% RETICGB	2.92	3.18	5.68	4.26	6.81	4.48	5.26
ERYTHROCYTES (18 6/MM 3)	8.82	7.38	7.29	7.38	7.98	7.44	7.67
MCV (U X 18 3)	58.88	58.88	58.88	58.88	49.88	49.88	49.88
MCH (UUG)	18.88	19.48	19.78	28.88	18.48	18.88	18.88
MCHC (G%)	17.68	37.98	39.28	48.88	37.88	38.38	38.88
NRBC (%WBC)	1.88	5.88	2.88	4.88	2.88	.88	2.88
RETICULOCYTES (%RBC)	3.38	4.88	2.78	*****	6.88	3.78	3.68
LEUCOCYTES (18 3/ MM 3)	5.36	8.49	18.95	9.39	8.49	8.49	8.49
LYMPHOCYTES (%WBC)	85.88	83.88	88.88	85.88	91.88	74.88	77.88
MONOCYTES (%WBC)	.88	.88	.88	1.88	.88	.88	3.88
EOSINOPHILS (%WBC)	.88	1.88	1.88	2.88	.88	3.88	1.88
BASOPHILS (%WBC)	.88	.88	.88	.88	.88	.88	.88
PLAT. NEUTROPHILS (%WBC)	15.88	16.88	11.88	12.88	9.88	23.88	19.88
PLAT. NEUTROPHILS (%WBC)	.88	.88	.88	.88	.88	.88	.88

A STRING OF ***** INDICATES NO DATA

TABLE 13-VI

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	VI							
	71	72	73	74	75	76	77	78
HEMATOCRIT (%)	36.65	34.87	36.21	34.87	31.51	32.85	34.42	35.54
HEMOGLOBIN (G%)	11.68	11.72	12.28	12.83	11.89	11.27	11.43	11.76
MEHGB (G%)	.92	.88	1.13	.49	.98	1.47	.86	.98
MEHGB (%)	7.35	6.39	8.43	3.91	8.12	11.54	7.88	7.69
ERYTHROCYTES (10 ⁶ /MM ³)	6.57	5.95	6.26	5.95	5.45	5.77	6.35	5.99
CV (%)	55.88	58.88	57.88	58.88	56.88	56.88	54.88	55.88
CH (UUG)	19.58	21.68	21.68	21.38	22.68	22.48	19.78	21.18
CHC (G%)	35.88	37.28	37.68	36.68	39.48	39.78	36.28	35.68
PBC (%WBC)	2.88	15.88	8.88	2.88	3.88	2.88	4.88	5.88
RETICULOCYTES (%RBC)	6.88	5.28	18.78	6.28	18.78	14.78	6.98	18.88
LEUCOCYTES (10 ³ /MM ³)	7.68	7.68	7.82	7.38	6.26	7.15	6.93	5.81
LYMPHOCYTES (%WBC)	83.88	95.88	78.88	78.88	78.88	69.88	81.88	77.88
MONOCYTES (%WBC)	.88	.88	1.88	.88	.88	1.88	.88	.88
EOSINOPHILS (%WBC)	.88	.88	.88	1.88	2.88	2.88	.88	3.88
BASOPHILS (%WBC)	.88	.88	.88	.88	.88	.88	.88	.88
PLAT. NEUTROPHILS (%WBC)	17.88	5.88	21.88	21.88	28.88	27.88	19.88	28.88
IMM. NEUTROPHILS (%WBC)	.88	.88	.88	.88	.88	1.88	.88	.88

A STRING OF ***** INDICATES NO DATA

TABLE 13-VII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	VII						
	81	82	83	84	85	86	87
HEMATOCRIT (%)	44.25	38.44	45.15	43.81	45.37	42.24	44.25
HEMOGLOBIN (G%)	17.82	14.38	16.58	15.66	16.21	15.71	16.56
MEYER (G%)	86	67	49	118	55	61	43
% METHGB	4.81	4.47	2.88	6.56	3.28	3.74	2.53
ERYTHROCYTES (10 ⁶ /MM ³)	9.2	8.88	9.16	8.98	9.85	8.72	9.23
MCV (10 ³ X 10 ³)	48.88	48.88	58.88	58.88	58.88	48.88	48.88
MCH (PG)	19.88	19.88	18.88	19.38	18.88	19.18	18.88
MCHC (G%)	41.5	39.88	37.68	39.88	37.48	39.68	39.18
NRBC (%WBC)	88	88	88	2.88	1.88	88	88
RETICULOCYTES (%RBC)	1.88	1.38	1.88	2.28	1.58	1.78	1.18
LEUCOCYTES (10 ³ /MM ³)	11.18	11.62	18.28	8.27	7.38	6.78	18.22
LYMPHOCYTES (%WBC)	20.88	29.88	66.88	64.88	75.88	87.88	76.88
MONOCYTES (%WBC)	4.88	3.88	3.88	2.88	88	88	88
EOSINOPHILS (%WBC)	3.88	2.88	88	2.88	1.88	1.88	1.88
BASOPHILS (%WBC)	88	88	88	88	88	88	88
PLAT. NEUTROPHILS (%WBC)	13.88	68.88	25.88	32.88	24.88	12.88	23.88
PLAT. NEUTROPHILS (%WBC)	88	1.88	88	88	88	88	88

A STRING OF ***** INDICATES NO DATA

TABLE 13-VIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	VIII						
	30						
HEMATOCRIT (%)	91	92	93	94	95	96	97
40.23	40.23	40.23	48.05	45.59	39.73	41.35	43.58
98						43.36	42.82
ERYTHROCYTES (G%)	15.99	15.13	17.45	16.38	15.93	14.79	16.44
15.89						16.27	15.89
HEMOCYTES (G%)	.55	.74	.43	.61	.61	.86	.55
.43						.49	.43
HEMOCYTES (G%)	3.33	4.66	2.40	3.59	3.69	5.50	3.24
2.64						2.92	2.64
ERYTHROCYTES (10 ⁶ /MM ³)	3.27	8.22	9.70	9.12	7.96	8.60	8.96
8.49						8.65	8.49
ERYTHROCYTES (10 ⁶ /MM ³)	43.00	49.00	50.00	50.00	50.00	48.00	49.00
50.00						50.00	50.00
ERYTHROCYTES (10 ⁶ /MM ³)	20.50	19.60	18.80	19.00	21.20	18.60	19.40
19.50						19.60	19.50
ERYTHROCYTES (10 ⁶ /MM ³)	42.50	40.20	37.80	38.20	42.40	39.00	39.90
40.10						39.40	39.70
ERYTHROCYTES (10 ⁶ /MM ³)	1.00	.00	1.00	1.00	.00	.00	1.00
1.00						2.00	1.00
ERYTHROCYTES (10 ⁶ /MM ³)	.40	1.50	.90	2.20	1.90	1.60	.90
1.50						1.00	1.50
ERYTHROCYTES (10 ⁶ /MM ³)	13.06	11.40	10.50	9.83	8.85	6.93	8.94
10.20						10.50	10.20
ERYTHROCYTES (10 ⁶ /MM ³)	73.00	74.00	72.00	88.00	91.00	77.00	90.00
84.00						84.00	72.00
ERYTHROCYTES (10 ⁶ /MM ³)	1.00	.00	1.00	3.00	.00	1.00	.00
.00						.00	.00
ERYTHROCYTES (10 ⁶ /MM ³)	1.00	4.00	3.00	1.00	.00	1.00	1.00
2.00						1.00	.00
ERYTHROCYTES (10 ⁶ /MM ³)	.00	.00	.00	.00	.00	.00	.00
.00						.00	.00
ERYTHROCYTES (10 ⁶ /MM ³)	22.00	22.00	18.00	8.00	9.00	21.00	9.00
20.00						15.00	20.00
ERYTHROCYTES (10 ⁶ /MM ³)	.00	.00	.00	.00	.00	.00	.00
.00						.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 13-IX
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	101	102	103	104	105	106	107	108	109	110
HEMATOCRIT (%)	*****	*****	*****	41.12	*****	*****	*****	*****	*****	48.23
HEMOGLOBIN (G%)	*****	*****	*****	15.47	*****	*****	*****	*****	*****	14.65
MEHGB (G%)	*****	*****	*****	.18	*****	*****	*****	*****	*****	.55
MEHGBE	*****	*****	*****	1.15	*****	*****	*****	*****	*****	3.62
ERYTHROCYTES (/MM ³)	*****	*****	*****	8.54	*****	*****	*****	*****	*****	8.18
PCV (% X 10 ³)	*****	*****	*****	48.88	*****	*****	*****	*****	*****	49.88
MCV (UUG)	*****	*****	*****	18.88	*****	*****	*****	*****	*****	18.88
MCCH (G%)	*****	*****	*****	39.88	*****	*****	*****	*****	*****	38.48
MRBC (MWBC)	*****	*****	*****	.88	*****	*****	*****	*****	*****	.88
PLATELETTES (/MM ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	1.68
LEUCOCYTES (/MM ³)	*****	*****	*****	10.28	*****	*****	*****	*****	*****	18.88
LYMPHOCYTES (/MM ³)	*****	*****	*****	66.88	*****	*****	*****	*****	*****	98.88
MONOCYTES (/MM ³)	*****	*****	*****	5.88	*****	*****	*****	*****	*****	.88
EOSINOPHILS (/MM ³)	*****	*****	*****	3.88	*****	*****	*****	*****	*****	.88
PLASMAPHILS (/MM ³)	*****	*****	*****	.88	*****	*****	*****	*****	*****	.88
NEUTROPHILS (/MM ³)	*****	*****	*****	26.88	*****	*****	*****	*****	*****	18.88
IMM. NEUTROPHILS (/MM ³)	*****	*****	*****	.88	*****	*****	*****	*****	*****	.88

A STRING OF ***** INDICATES NO DATA

TABLE 13-X
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP	111	112	113	114	115	116	117	118	119	120
TAT (MG/KG/DAY)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
RDX (MG/KG/DAY)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TEST ANIMAL NUMBER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEMATOCRIT (%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEMOGLOBIN (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEMIGR (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEMIGB	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
ERYTHROCYTES (10 ⁶ /MM ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MCV (FL X 10 ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
PCV (UUG)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MPHC (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MPBC (WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
PLATICOCTES (PEC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LEUCOCYTES (10 ³ /MM ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LYMPHOCTES (WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MONOCYTES (WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
EOSINOPHILS (WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
THAOPHILS (WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TAT. NEUTROPHILS (WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TAT. NEUTROPHILS (WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

THIRTEEN WEEK ORAL (D&T) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

[illegible]

A STRING OF ***** INDICATES NO DATA

16116/16121, STUDY NO.1

TABLE 13-XII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP	XII									
TNT (MG/KG/DAY)	5									
RDX (MG/KG/DAY)	30									
MIXTURE	131	132	133	134	135	136	137	138	139	140
TEST ANIMAL	44.25	40.23	42.02	42.46	43.36	40.68	40.90	42.24	35.76	40.45
HEMATOCRIT (%)	16.50	15.29	15.60	15.66	15.42	14.91	14.83	15.28	13.69	15.72
HEMOGLOBIN (G%)	.49	.80	.49	.43	.67	.74	.37	.37	.61	.37
MEAN CORPUSCULAR VOLUME (CV) (FL)	2.38	4.97	2.04	2.67	4.16	4.73	2.43	2.36	4.26	2.30
MEAN CORPUSCULAR HEMATOCRIT (MCHC) (%)	8.31	8.27	8.63	8.72	8.90	8.90	7.84	8.56	7.51	8.40
MEAN CORPUSCULAR HEMOGLOBIN (MCH) (PG)	20.00	19.80	19.00	19.00	18.50	17.80	19.90	18.80	19.40	19.50
MEAN CORPUSCULAR HEMATOCRIT (MCHC) (%)	39.80	40.00	39.30	39.00	37.90	39.00	38.40	39.30	40.90	40.80
MEAN CORPUSCULAR HEMOGLOBIN (MCH) (PG)	2.00	.00	2.00	3.00	.00	.00	4.00	.00	1.00	.00
MEAN CORPUSCULAR HEMATOCRIT (MCHC) (%)	.50	.00	1.00	.00	*****	1.60	2.90	1.60	1.10	1.90
LEUCOCYTES (WBC) (MM ³)	11.18	9.39	8.94	12.52	9.16	6.26	11.62	9.83	8.05	9.83
LYMPHOCYTES (LYM) (WBC) (%)	30.00	87.00	89.00	66.00	84.00	71.00	67.00	79.00	40.00	79.00
NEUTROPHILS (NEU) (WBC) (%)	.00	3.00	.00	3.00	.00	.00	1.00	2.00	2.00	2.00
EOSINOPHILS (EOS) (WBC) (%)	1.00	1.00	.00	1.00	4.00	6.00	2.00	3.00	1.00	2.00
PLASMAPHILS (PLA) (WBC) (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MONOCYTES (MON) (WBC) (%)	11.00	9.00	11.00	30.00	12.00	23.00	30.00	16.00	37.00	18.60
PLASMAPHILS (PLA) (WBC) (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 13-XIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROLOUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL TEST NUMBER HEMATOCRIT (%)	XIII 5 308				
	141	142	143	144	145
HEMATOCRIT (%)	*****	*****	*****	*****	*****
HEMOGLOBIN (G%)	*****	*****	*****	*****	*****
WBC (G%)	*****	*****	*****	*****	*****
PLT (G%)	*****	*****	*****	*****	*****
ERYTHROCYTES (10 ⁶ /MM ³)	*****	*****	*****	*****	*****
LEUCOCYTES (10 ³ /MM ³)	*****	*****	*****	*****	*****
MONOCYTES (WBC)	*****	*****	*****	*****	*****
LYMPHOCYTES (WBC)	*****	*****	*****	*****	*****
NEUTROPHILS (WBC)	*****	*****	*****	*****	*****
EOSINOPHILS (WBC)	*****	*****	*****	*****	*****
PLASMAPHILS (WBC)	*****	*****	*****	*****	*****
PLT. NEUTROPHILS (WBC)	*****	*****	*****	*****	*****
PLT. NEUTROPHILS (WBC)	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 13-XIV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

[illegible]

A STRING OF ***** INDICATES NO DATA

TABLE 13-XV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	161	162	163	164	165	166	167	168	169	178
WBC (x10 ⁹ /L)	42.69	*****	34.87	34.42	36.88	48.81	38.89	38.22	36.88	38.89
HEMOGLOBIN (G%)	15.40	*****	12.96	13.84	13.56	14.28	13.69	13.14	12.89	13.37
HEMATOCRIT (G%)	.61	*****	.67	.24	.74	.92	.61	.49	.74	.49
MEAN CORPUSCULAR VOLUME (CV) (FL)	3.79	*****	4.91	1.70	5.17	6.85	4.26	3.59	5.43	3.54
ERYTHROCYTES (x10 ¹² /L)	9.21	*****	7.15	7.11	7.28	7.87	7.82	7.82	7.24	7.96
PLATELETS (x10 ⁹ /L)	46.30	*****	48.80	48.80	51.80	50.80	50.80	48.80	50.80	48.80
PROTHROMBIN TIME (SEC)	18.00	*****	19.40	28.20	28.00	19.50	18.60	17.80	19.20	18.80
PT (SEC)	38.80	*****	48.30	42.20	39.30	38.50	37.40	36.40	37.70	36.80
PTAP (SEC)	.80	*****	2.00	1.00	2.00	3.60	2.00	1.80	2.00	1.80
PTT (SEC)	1.90	*****	2.00	2.20	2.20	1.30	8.20	2.80	4.70	6.30
LYMPHOCYTES (x10 ⁹ /L)	7.60	*****	8.85	18.50	8.27	18.73	18.73	13.73	9.61	9.83
MONOCYTES (x10 ⁹ /L)	55.00	*****	89.00	82.00	91.00	93.00	81.30	83.00	76.00	79.00
NEUTROPHILS (x10 ⁹ /L)	1.00	*****	2.00	.00	.00	.00	.00	.00	4.00	.00
EOSINOPHILS (x10 ⁹ /L)	4.00	*****	.00	3.00	1.00	1.00	1.00	.00	1.00	.00
BASOPHILS (x10 ⁹ /L)	.00	*****	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL LEUCOCYTES (x10 ⁹ /L)	40.00	*****	9.00	15.00	8.00	6.00	18.00	17.00	19.00	21.00
TOTAL NEUTROPHILS (x10 ⁹ /L)	.00	*****	.00	.00	.00	.00	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 13-XVI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR MALES

TREATMENT GROUP	171	172	173	174	175	176	177	178	179	183
TNT (MG/KG/DAY)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
RDX (MG/KG/DAY)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TEST ANIMAL	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
NUMBER	171	172	173	174	175	176	177	178	179	183
HEMATOCRIT (%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEMOGLOBIN (G)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEMATS (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEMOC	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
ERYTHROCYTES (X 10 ⁶ /MM ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MCV (FL)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MCH (PG)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MCHC (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
RDWC (RDWC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
RETICULOCYTES (RET)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LEUCOCYTES (X 10 ³ /MM ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LYMPHOCYTES (LYM)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MONOCYTES (MON)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
EOSINOPHILS (EOS)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
THIOPHILS (THI)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
PLAT. NEUTROPHILS (PLAT)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
PLAT. NEUTROPHILS (PLAT)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 14-1
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	I														
	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195
HEMATOCRIT (%)	44.70	42.69	44.48	45.59	42.46	44.70	44.70	46.93	45.15	45.37	47.38	44.25	46.26	45.77	45.59
HEMOGLOBIN (G%)	16.20	16.54	17.06	17.70	15.97	17.15	16.93	17.70	16.17	17.03	*****	16.38	17.76	17.75	*****
MEHGB (G%)	.12	.00	.37	.18	.12	.06	.06	.18	.37	.18	*****	.61	.12	.12	*****
% METHGB	.74	.00	2.12	1.01	.75	.35	.35	1.01	2.24	1.05	*****	3.59	.67	.67	*****
ERYTHROCYTES (10 ⁶ /MM ³)	8.22	8.05	8.47	8.67	7.91	8.54	8.40	8.83	8.40	8.69	9.12	8.09	8.72	8.72	8.67
MCV (U X 10 ³)	54.00	52.00	52.00	53.00	53.00	52.00	53.00	53.00	54.00	52.00	52.00	54.00	53.00	53.00	52.00
MCH (UG)	20.40	21.00	20.70	20.70	20.60	20.60	20.40	20.60	20.20	20.20	21.00	21.20	21.00	20.70	20.40
MCHC (G%)	37.40	39.00	39.60	39.40	38.10	39.40	38.50	38.80	37.70	38.80	40.00	39.00	39.60	39.80	38.80
MRBC (%WBC)	.02	.00	3.00	.00	1.00	.00	.00	1.00	3.00	.00	.00	1.00	2.00	.00	.00
RETICULOCYTES (%RBC)	1.10	1.30	.70	.50	.70	.70	.70	1.00	.80	1.10	.90	1.00	.00	.50	1.10
LEUCOCYTES (10 ³ /MM ³)	8.27	8.49	7.82	5.81	8.05	8.72	8.94	6.70	6.26	7.15	6.26	5.59	6.70	8.05	7.15
LYMPHOCYTES (%WBC)	74.00	83.00	64.00	74.00	71.00	71.00	74.00	70.00	79.00	82.00	76.00	84.00	88.00	70.00	87.00
MONOCYTES (%WBC)	.00	3.00	3.00	.00	.00	1.00	.00	.00	.00	1.00	.00	1.00	2.00	1.00	.00
EOSINOPHILS (%WBC)	.00	2.00	.00	.00	1.00	.00	.00	.00	.00	1.00	1.00	2.00	.00	4.00	1.00
BASOPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
WAT. NEUTROPHILS (%WBC)	26.00	12.00	33.00	26.00	28.00	28.00	26.00	28.00	21.00	16.00	23.00	13.00	10.00	16.00	12.00
IMM. NEUTROPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 14-1 (CONT.)
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	\bar{I}									
	196	197	198	199	200	201	202	203	204	205
HEMATOCRIT (%)	47.16	46.93	43.81	44.03	46.49	46.49	47.38	46.04	44.25	39.34
HEMOGLOBIN (G%)	17.25	16.64	16.87	18.21	17.82	17.82	17.82	17.78	16.50	16.35
% MTHGB (G%)	.18	.12	.12	.12	.12	.06	.06	.55	.49	.18
% MTHGB	*****	1.03	.72	.71	.65	.34	*****	3.00	2.88	1.09
ERYTHROCYTES (10 ⁶ /MM ³)	8.90	9.03	8.16	8.20	8.76	8.94	8.85	8.83	8.36	7.35
MCV (U X 10 ³)	53.00	52.00	53.00	53.00	53.00	52.00	54.00	52.00	53.00	51.00
MCH (UG)	28.40	19.50	21.00	21.20	21.40	20.20	21.10	20.90	20.60	22.60
MCHC (G%)	38.40	37.80	39.20	39.60	40.60	38.00	39.40	40.40	38.80	42.80
MRBC (%WBC)	.00	.00	.00	.00	.00	1.00	1.00	.00	.00	2.00
RETICULOCYTES (%RBC)	.90	1.20	.40	.80	1.10	.50	.60	.40	.70	2.30
LEUCOCYTES (10 ³ /MM ³)	9.83	8.94	8.05	6.26	5.36	7.38	6.93	6.48	7.60	5.36
LYMPHOCYTES (%WBC)	95.00	73.00	83.00	93.00	75.00	88.00	82.00	67.00	79.00	78.00
MONOCYTES (%WBC)	.00	.00	.00	.00	.00	2.00	1.00	2.00	.00	5.00
EOSINOPHILS (%WBC)	.00	1.00	2.00	1.00	1.00	2.00	1.00	4.00	1.00	2.00
BASOPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PLAT. NEUTROPHILS (%WBC)	5.00	26.00	15.00	6.00	24.00	8.00	16.00	27.00	20.00	15.00
LYM. NEUTROPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 14-II
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
FENAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP							
II							
1							
1							
TBT (MG/KG/DAY)	211	212	213	214	215	216	217
RDX (MG/KG/DAY)	211	212	213	214	215	216	217
TEST ANIMAL	211	212	213	214	215	216	217
NUMBER	211	212	213	214	215	216	217
HEMATOCRIT	49.17	44.83	46.93	44.25	46.71	48.72	43.81
(%)							
HEMOGLOBIN	18.37	16.58	17.78	17.37	*****	*****	*****
(G%)							
MEYHGB	.18	.18	.55	.86	*****	*****	*****
(G%)							
% MEYHGB	.97	1.87	3.88	.34	*****	*****	*****
ERYTHROCYTES	9.54	8.54	8.94	8.67	8.76	9.34	8.27
(1E 6/MM 3)							
MCV	52.58	52.88	52.88	51.88	53.88	52.88	53.88
(U X 1E 3)							
MCH	19.88	28.88	28.88	28.28	28.48	19.78	21.28
(UG)							
MCHC	38.28	39.88	39.88	48.68	38.28	37.88	48.88
(G%)							
WBBC (%WBC)	2.88	.88	.88	.88	.88	.88	1.88
RETICULOCYTES	1.38	1.18	.88	.98	.98	.78	1.18
(%RBC)							
LEUCOCYTES	18.58	8.85	8.72	7.68	6.78	6.48	18.86
(1E 3/ MM 3)							
LYMPHOCYTES	91.88	93.88	88.88	72.88	83.88	88.88	72.88
(%WBC)							
MONOCYTES	.88	.88	.88	1.88	.88	1.88	1.88
(%WBC)							
EOSINOPHILS	1.88	.88	1.88	2.88	.88	1.88	.88
(%WBC)							
BASOPHILS	.88	.88	.88	.88	.88	.88	.88
(%WBC)							
%T. NEUTROPHILS	8.88	7.88	19.88	25.88	17.88	18.88	25.88
(%WBC)							
IMM. NEUTROPHILS	.88	.88	.88	.88	.88	.88	.88
(%WBC)							

A STRING OF ***** INDICATES NO DATA

TABLE 14-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP		III									
TNT (MG/KG/DAY)		5									
RDX (MG/KG/DAY)											
TEST ANIMAL											
NUMBER											
HEMATOCRIT		221	222	223	224	225	226	227	228	229	230
(%)		43.81	45.82	44.25	45.59	46.93	44.25	42.46	45.15	65.93	44.03
HEMOGLOBIN		16.83	17.78	16.29	17.76	17.76	16.81	*****	16.93	*****	16.85
(G%)											
METHGB		.86	.18	.25	.12	.12	.18	*****	.86	*****	.49
(G%)											
% METHGB		.37	1.01	1.51	.67	.67	1.06	*****	.35	*****	2.96
ERYTHROCYTES		8.54	8.74	8.54	8.78	9.12	8.49	7.91	9.54	12.69	3.77
(10 ⁶ /MM ³)											
MCV		52.88	52.88	52.88	52.88	52.88	52.88	54.88	52.88	52.88	53.88
(U X 10 ³)											
MCH		19.28	28.63	19.78	28.68	19.98	28.28	21.28	28.28	21.88	28.68
(UG)											
MCHC		37.48	39.48	38.28	39.88	38.68	38.88	39.58	38.38	41.88	38.88
(G%)											
NEBC (%WBC)		1.88	.88	.88	.88	.88	.88	.88	1.88	2.88	1.88
RETICULOCYTES		.88	.98	1.98	.58	1.48	1.18	1.58	1.58	1.58	2.28
(%RBC)											
LEUCOCYTES		8.94	6.93	6.83	8.85	8.27	6.78	5.81	7.15	7.15	6.26
(10 ³ /MM ³)											
LYMPHOCYTES		61.88	89.88	81.88	88.88	87.88	87.88	63.88	81.88	67.88	65.88
(%WBC)											
MONOCYTES		1.88	.88	.88	.88	1.28	.88	9.88	1.88	.88	.88
(%WBC)											
EOSINOPHILS		2.88	1.88	4.88	1.88	1.88	2.88	2.88	3.88	1.88	2.88
(%WBC)											
BASOPHILS		.88	.88	.88	.88	.88	.88	.88	.88	.88	.88
(%WBC)											
MAT. NEUTROPHILS		36.88	18.88	15.88	19.88	11.88	11.88	26.88	15.88	32.88	33.88
(%WBC)											
IMM. NEUTROPHILS		.88	.88	.88	.88	.88	.88	.88	.88	.88	.88
(%WBC)											

A STRING OF ***** INDICATES NO DATA

TABLE 14-IV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAMETHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (NDX) AND TNT/NDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) NDX (MG/KG/DAY) TEST ANIMAL	231	232	233	234	235	236	237	238	239	240
HEMATOCRIT (%)	43.36	45.23	44.83	45.59	44.25	43.14	46.49	43.36	42.46	44.25
HEMOGLOBIN (G%)	16.83	15.38	*****	17.37	16.23	15.73	17.88	16.42	15.59	16.36
HEMTCB (G%)	.86	.12	*****	.86	.31	.36	.88	.12	.86	.18
* MTHGB	.37	.78	*****	.34	1.87	2.24	.88	.73	.38	1.89
ERYTHROCYTES (10 ⁶ /MM ³)	8.89	7.68	8.43	8.76	8.52	8.18	8.99	8.89	7.96	8.85
MCV (U X 10 ³)	54.88	52.88	52.88	52.88	52.88	52.88	52.88	53.88	52.88	55.88
MCH (UG)	28.48	28.68	28.58	28.28	19.88	28.28	28.43	28.78	28.18	21.88
MCHC (G%)	38.28	39.28	39.28	38.98	38.18	38.38	39.28	38.78	37.98	38.28
MHBC (%WBC)	.88	.88	1.88	1.88	.88	1.88	.88	.88	1.88	2.88
RETICULOCYTES (%RBC)	2.18	*****	1.18	*****	1.98	1.88	2.58	3.78	1.48	2.88
LEUCOCYTES (10 ³ /MM ³)	7.38	8.85	9.16	7.15	7.38	7.68	7.15	6.78	8.85	6.48
LYMPHOCYTES (%WBC)	85.88	85.88	73.88	83.88	87.88	83.88	63.88	78.88	77.88	78.88
MONOCYTES (%WBC)	.88	2.88	.88	.88	2.88	.88	2.88	1.88	.88	2.88
EOSINOPHILS (%WBC)	1.88	.88	.88	1.88	2.88	3.88	3.88	4.88	1.88	3.88
BASOPHILS (%WBC)	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88
PAT. NEUTROPHILS (%WBC)	14.88	14.88	27.88	26.88	9.88	14.88	32.88	25.88	22.88	25.88
IMM. NEUTROPHILS (%WBC)	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88

A STRING OF ***** INDICATES NO DATA

TABLE 14-V

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	V				
	241	242	243	244	245
HEMATOCRIT (%)	38.89	39.56	41.57	36.65	35.31
HEMOGLOBIN (G%)	14.18	18.52	14.32	13.19	13.51
METHGB (G%)	.12	.43	.43	.00	.12
% METHGB	.84	3.93	2.92	.00	.88
ERYTHROCYTES (10 ⁶ /MM ³)	7.20	7.86	7.31	6.30	6.41
MCV (U X 10 ³)	54.80	56.80	56.80	57.00	54.00
MCH (UG)	28.80	15.80	28.60	21.30	21.60
MCHC (G%)	37.30	28.20	36.50	36.80	39.60
WBBC (%WBC)	*****	1.00	2.00	2.00	1.00
RETICULOCYTES (%RBC)	*****	3.00	8.30	8.80	4.10
LEUCOCYTES (10 ³ /MM ³)	8.49	6.70	6.26	10.28	8.72
LYMPHOCYTES (%WBC)	*****	81.00	75.00	61.00	78.00
MONOCYTES (%WBC)	*****	1.00	.00	4.00	1.00
EOSINOPHILS (%WBC)	*****	.00	1.00	1.00	.00
BASOPHILS (%WBC)	*****	.00	.00	.00	.00
NAT. NEUTROPHILS (%WBC)	*****	18.00	24.00	34.00	21.00
IMM. NEUTROPHILS (%WBC)	*****	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 14-VI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP	VI					
TNT (MG/KG/DAY)	300					
RDX (MG/KG/DAY)						
TEST ANIMAL						
NUMBER	251	252	253	254	255	256
HEMATOCRIT (%)	37.55	34.87	39.34	42.69	36.88	39.34
HEMOGLOBIN (G%)	12.92	11.78	13.88	13.37	13.37	14.26
MEYHGB (G%)	.49	.37	.55	.49	.49	.49
* MEYHGB	3.65	3.87	4.83	3.54	3.54	3.32
ERYTHROCYTES (10 ⁶ /MM ³)	6.62	5.99	6.64	6.57	6.19	6.66
MCV (U X 10 ³)	56.88	58.88	59.88	65.88	59.88	59.88
MCH (UG)	21.88	28.78	28.98	21.48	22.58	22.88
MCHC (G%)	36.08	35.88	35.48	33.88	37.98	38.58
MRBC (%WBC)	2.88	1.88	.88	1.88	3.88	.88
RETICULOCYTES (%RBC)	13.28	12.88	*****	11.58	21.58	19.68
LEUCOCYTES (10 ³ /MM ³)	8.49	8.94	6.78	6.78	8.49	5.81
LYMPHOCYTES (%WBC)	73.88	76.88	79.88	87.88	87.88	87.88
MONOCYTES (%WBC)	.88	1.88	.88	.88	.88	2.88
EOSINOPHILS (%WBC)	2.88	1.88	1.88	.88	.88	1.88
BASOPHILS (%WBC)	.88	.88	.88	.88	.88	.88
PLAT. NEUTROPHILS (%WBC)	22.88	22.88	28.88	13.88	13.88	18.88
IMM. NEUTROPHILS (%WBC)	.88	.88	.88	.88	.88	.88

A STRING OF ***** INDICATES NO DATA

TABLE 14-VII
THIRTEEN WEEK OPAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	VII - 18						
	261	262	263	264	265	266	267
HEMATOCRIT (%)	45.15	45.59	46.84	45.15	44.78	44.78	46.93
HEMOGLOBIN (G%)	17.43	16.93	17.31	17.37	16.97	16.81	16.11
HEMTCB (G%)	.88	.86	.12	*****	.86	.12	.12
HEMTCB (G%)	.88	.35	.69	*****	.34	.71	.69
ERYTHROCYTES (10 ⁶ /MM ³)	8.48	8.67	8.72	8.49	8.31	8.31	8.83
WBC (10 ⁶ X 10 ³)	54.88	52.88	53.88	53.88	53.88	54.88	53.88
PLT (10 ⁶ X 10 ³)	21.28	28.18	28.48	28.98	21.38	28.88	28.18
PLT (G%)	39.68	38.28	38.48	39.58	39.98	38.88	37.88
PLT (%WBC)	.88	1.88	1.88	2.88	.88	1.88	.88
PLTICULOCYTES (%RBC)	.78	.88	*****	2.88	.98	*****	.48
LEUCOCYTES (10 ³ / MM ³)	9.39	8.49	8.94	13.41	7.38	8.72	8.94
LYMPHOCYTES (%WBC)	84.88	86.88	86.88	59.88	86.88	78.88	86.88
MONOCYTES (%WBC)	1.88	.88	.88	3.88	.88	1.88	.88
EOSINOPHILS (%WBC)	.88	.88	.88	.88	3.88	1.88	.88
NEUTROPHILS (%WBC)	.88	.88	.88	.88	.88	.88	.88
PL. NEUTROPHILS (%WBC)	15.88	14.88	14.88	28.88	11.88	28.88	11.88
PL. NEUTROPHILS (%WBC)	.88	.88	.88	.88	.88	.88	.88

A STRING OF ***** INDICATES NO DATA

TABLE 14-VIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL	VIII - 30									
	271	272	273	274	275	276	277	278	279	280
HEMATOCRIT (%)	44.25	42.46	42.46	44.48	42.46	43.01	44.70	43.58	43.81	42.91
HEMOGLOBIN (G*)	16.94	16.14	16.42	16.93	16.42	*****	16.29	*****	16.58	15.08
MEHGB (G*)	.49	.18	.12	.06	.12	*****	.25	*****	.18	.12
MEHGB/CB	2.81	1.10	.73	.35	.73	*****	1.51	*****	1.07	.79
ERYTHROCYTES (10 ⁶ /MM ³)	9.25	7.91	8.00	8.45	7.96	8.05	8.40	8.20	8.22	8.67
PCV (UUG)	54.00	54.00	53.00	52.00	54.00	53.00	53.00	53.00	54.00	50.00
MCH (G*)	21.60	20.60	21.20	20.30	21.00	20.40	20.00	20.50	20.80	17.90
MCHC (G*)	40.40	39.00	39.90	38.80	39.40	38.00	37.70	38.70	38.90	36.00
MBC (%WBC)	.00	.00	2.00	.00	.00	.00	.00	.00	.00	1.00
RETICULOCYTES (%RBC)	.00	2.90	.00	*****	1.00	2.60	1.20	1.20	1.80	*****
LEUCOCYTES (10 ³ /MM ³)	9.83	8.94	7.15	9.61	9.83	11.18	7.82	8.72	9.16	8.94
LYMPHOCYTES (%WBC)	80.00	81.00	69.00	94.00	84.00	92.00	74.00	67.00	75.00	65.00
MONOCYTES (%WBC)	2.00	.00	2.00	.00	1.00	.00	1.00	.00	1.00	1.00
EOSINOPHILS (%WBC)	1.00	.00	1.00	1.00	.00	2.00	1.00	2.00	1.00	.00
BAZOPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAT. NEUTROPHILS (%WBC)	17.00	19.00	28.00	5.00	15.00	6.00	24.00	31.00	23.00	39.00
IMM. NEUTROPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 14-IX
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	IX - 100									
	281	282	283	284	285	286	287	288	289	290
HEMATOCRIT (%)	48.23	44.48	42.91	*****	*****	44.25	*****	*****	*****	39.56
HEMOGLOBIN (G%)	14.57	16.54	15.91	*****	*****	16.29	*****	*****	*****	14.85
METHGB (G%)	.18	.88	.18	*****	*****	.25	*****	*****	*****	.12
% METHGE	1.22	.88	1.12	*****	*****	1.51	*****	*****	*****	.88
ERYTHROCYTES (10 ⁶ /MM ³)	7.55	8.49	8.27	*****	*****	8.40	*****	*****	*****	7.73
MCV (U X 10 ³)	53.88	52.88	52.88	*****	*****	52.88	*****	*****	*****	51.88
MCH (UG)	28.18	19.88	19.88	*****	*****	19.98	*****	*****	*****	19.78
MCHC (G%)	37.88	37.98	38.18	*****	*****	37.88	*****	*****	*****	38.68
NRBC (%WBC)	.88	.88	.88	*****	*****	.88	*****	*****	*****	.88
RETICULOCYTES (%RBC)	1.78	2.88	.58	*****	*****	.48	*****	*****	*****	2.28
LEUCOCYTES (10 ³ /MM ³)	18.86	12.96	13.86	*****	*****	18.86	*****	*****	*****	12.74
LYMPHOCYTES (%WBC)	87.88	71.88	88.88	*****	*****	87.88	*****	*****	*****	67.88
MONOCYTES (%WBC)	.88	2.88	.88	*****	*****	.88	*****	*****	*****	3.88
EOSINOPHILS (%WBC)	1.88	.88	1.88	*****	*****	.88	*****	*****	*****	7.88
BASOPHILS (%WBC)	.88	.88	.88	*****	*****	.88	*****	*****	*****	.88
%T. NEUTROPHILS (%WBC)	12.88	27.88	19.88	*****	*****	18.88	*****	*****	*****	22.88
IMM. NEUTROPHILS (%WBC)	.88	.88	.88	*****	*****	.88	*****	*****	*****	.88

A STRING OF ***** INDICATES NO DATA

TABLE 14-X
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP	X									
TNT (MG/KG/DAY)	-									
RDX (MG/KG/DAY)	300									
TEST ANIMAL	291	292	293	294	295	296	297	298	299	300
NUMBER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEMATOCRIT (%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEMOGLOBIN (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
METHGB (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
* METHGB	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
ERYTHROCYTES (10 ⁶ /MM ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MCV (U X 10 ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MCH (UG)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MCHC (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
NRBC (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
RETICULOCYTES (%RBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LEUCOCYTES (10 ³ /MM ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LYMPHOCYTES (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MONOCYTES (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
EOSINOPHILS (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BASOPHILS (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
PLAT. NEUTROPHILS (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
IMM. NEUTROPHILS (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF "*****" INDICATES NO DATA

TABLE 14-XI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP		XI		608		608	
TNT (MG/KG/DAY)							
RDX (MG/KG/DAY)							
TEST ANIMAL							
NUMBER	381	382	383	384	385	386	387
HEMATOCRIT	*****	*****	*****	*****	*****	*****	*****
(%)	*****	*****	*****	*****	*****	*****	*****
HEMOGLOBIN	*****	*****	*****	*****	*****	*****	*****
(G%)	*****	*****	*****	*****	*****	*****	*****
METHGB	*****	*****	*****	*****	*****	*****	*****
(G%)	*****	*****	*****	*****	*****	*****	*****
METHGE	*****	*****	*****	*****	*****	*****	*****
ERYTHROCYTES	*****	*****	*****	*****	*****	*****	*****
(18 6/MM 3)	*****	*****	*****	*****	*****	*****	*****
MCV	*****	*****	*****	*****	*****	*****	*****
(U X 18 3)	*****	*****	*****	*****	*****	*****	*****
MCH	*****	*****	*****	*****	*****	*****	*****
(UG)	*****	*****	*****	*****	*****	*****	*****
MCHC	*****	*****	*****	*****	*****	*****	*****
(G%)	*****	*****	*****	*****	*****	*****	*****
MEBC	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****
PLTICULOCYTES	*****	*****	*****	*****	*****	*****	*****
(%RBC)	*****	*****	*****	*****	*****	*****	*****
LEUCOCYTES	*****	*****	*****	*****	*****	*****	*****
(18 3/ MM 3)	*****	*****	*****	*****	*****	*****	*****
LYMPHOCYTES	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****
MONOCYTES	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****
EOSINOPHILS	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****
BASOPHILS	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****
PLAT. NEUTROPHILS	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****
IMM. NEUTROPHILS	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 14-XII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	XII									
	311	312	313	314	315	316	317	318	319	320
HEMATOCRIT (%)	44.78	43.81	44.25	45.37	43.36	41.35	46.84	43.36	45.37	42.91
HEMOGLOBIN (G%)	16.29	16.28	16.83	16.36	16.81	16.58	*****	16.42	17.51	16.11
MEGAB (G%)	.25	.12	.86	.18	.18	.18	*****	.12	.37	.43
ERYTHROCYTES (10 ⁶ /MM ³)	1.51	.74	.37	1.89	1.86	1.87	*****	.73	2.07	2.68
MCV (FL 10 ⁶ 3)	8.72	8.27	8.31	8.54	7.96	7.73	8.65	8.89	8.48	8.88
MCH (PG 10 ⁶ 3)	51.88	53.88	53.88	53.88	54.88	53.88	53.88	53.88	54.88	54.88
MCHC (G%)	19.58	28.18	19.88	19.68	21.48	22.18	28.28	28.68	21.58	21.28
NRBC (%WBC)	39.88	37.88	37.38	37.88	39.68	41.68	37.88	38.88	39.88	39.48
RETICULOCYTES (%RBC)	1.88	.88	.88	1.88	.88	1.88	.88	2.88	.88	1.88
LEUCOCYTES (10 ³ /MM ³)	1.48	.88	1.98	1.38	1.88	1.18	.68	1.48	.78	1.88
LYMPHOCYTES (%WBC)	8.88	8.49	11.48	7.38	7.68	7.68	18.28	8.49	7.68	7.15
MONOCYTES (%WBC)	85.88	73.88	78.88	78.88	69.88	74.88	89.88	88.88	79.88	62.88
EOSINOPHILS (%WBC)	2.88	1.88	.88	1.88	1.88	.88	.88	.88	.88	4.88
BASOPHILS (%WBC)	3.88	3.88	3.88	2.88	3.88	1.88	.88	2.88	.88	1.88
PLAT. NEUTROPHILS (%WBC)	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88
PLAT. NEUTROPHILS (%WBC)	22.88	21.88	21.88	19.88	27.88	25.88	11.88	14.88	21.88	33.88
PLAT. NEUTROPHILS (%WBC)	1.88	1.88	.88	.88	.88	.88	.88	.88	.88	.88

A STRING OF ***** INDICATES NO DATA

TABLE 14-XIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP		XIII						
TNT (MG/KG/DAY)		5						
RDX (MG/KG/DAY)		300						
TEST ANIMAL								
NUMBER	321	322	323	324	325	326	327	328
HEMATOCRIT	*****	*****	*****	*****	*****	*****	*****	*****
(%)	*****	*****	*****	*****	*****	*****	*****	*****
HEMOGLOBIN	*****	*****	*****	*****	*****	*****	*****	*****
(G%)	*****	*****	*****	*****	*****	*****	*****	*****
METHGB	*****	*****	*****	*****	*****	*****	*****	*****
(G%)	*****	*****	*****	*****	*****	*****	*****	*****
% METHGB	*****	*****	*****	*****	*****	*****	*****	*****
ERYTHROCYTES	*****	*****	*****	*****	*****	*****	*****	*****
(1/6 6/MM 3)	*****	*****	*****	*****	*****	*****	*****	*****
MCV	*****	*****	*****	*****	*****	*****	*****	*****
(U X 10 ³)	*****	*****	*****	*****	*****	*****	*****	*****
MCH	*****	*****	*****	*****	*****	*****	*****	*****
(UG)	*****	*****	*****	*****	*****	*****	*****	*****
MCHC	*****	*****	*****	*****	*****	*****	*****	*****
(G%)	*****	*****	*****	*****	*****	*****	*****	*****
MEBC	*****	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****	*****
RETICULOCYTES	*****	*****	*****	*****	*****	*****	*****	*****
(%RBC)	*****	*****	*****	*****	*****	*****	*****	*****
LEUCOCYTES	*****	*****	*****	*****	*****	*****	*****	*****
(1/3 3/MM 3)	*****	*****	*****	*****	*****	*****	*****	*****
LYMPHOCYTES	*****	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****	*****
MONOCYTES	*****	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****	*****
EOSINOPHILS	*****	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****	*****
BASOPHILS	*****	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****	*****
MAI. NEUTROPHILS	*****	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****	*****
IMM. NEUTROPHILS	*****	*****	*****	*****	*****	*****	*****	*****
(%WBC)	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 14-XIV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	XIV									
	331	332	333	334	335	336	337	338	339	340
HEMATOCRIT (%)	39.34	37.55	38.89	39.78	42.02	38.89	37.55	40.23	40.23	*****
HEMOGLOBIN (G%)	14.79	13.74	13.65	13.83	15.05	13.43	13.96	14.57	14.18	14.57
METHGE (G%)	.18	.12	.43	.25	.37	.43	.12	.18	.12	.18
% METHGE	1.28	.87	3.05	1.78	2.40	3.10	.85	1.22	.84	1.22
ERYTHROCYTES (10 ⁶ /MM ³)	7.15	6.88	7.17	7.31	7.82	7.24	7.00	7.46	7.31	7.17
MCV (U X 10 ³)	54.08	54.08	54.08	54.08	54.08	53.08	53.08	53.08	55.08	*****
MCH (UG)	21.48	20.88	20.88	19.70	20.10	19.70	20.40	19.90	20.00	21.00
MCHC (G%)	39.10	38.30	36.80	36.20	37.60	36.60	38.00	37.40	36.40	*****
NRBC (%WBC)	1.00	1.00	2.00	1.00	2.00	.00	.00	1.00	.00	1.00
RETICULOCYTES (%RBC)	4.10	3.40	2.70	3.60	3.10	2.40	3.10	4.40	2.30	4.60
LEUCOCYTES (10 ³ /MM ³)	6.70	7.15	8.49	9.39	8.94	8.94	7.82	8.05	9.16	8.94
LYMPHOCYTES (%WBC)	73.00	80.00	64.00	80.00	71.00	75.00	84.00	76.00	83.00	97.00
MONOCYTES (%WBC)	.00	2.00	4.00	.00	1.00	.00	1.00	1.00	2.00	.00
EOSINOPHILS (%WBC)	1.00	2.00	1.00	1.00	.00	3.00	1.00	2.00	2.00	.00
BASOPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
%AT. NEUTROPHILS (%WBC)	26.00	16.00	31.00	19.00	28.00	22.00	14.00	21.00	13.00	3.00
%PM. NEUTROPHILS (%WBC)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 14-XV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	341	342	343	344	345	346	347	348	349	350
HEMATOCRIT (%)	36.21	35.09	37.55	36.43	38.89	38.89	*****	38.89	36.21	38.67
HEMOGLOBIN (G%)	13.31	12.76	13.55	12.65	13.87	13.59	*****	13.93	13.43	13.43
METHGB (G%)	.55	.43	.31	.31	.43	.49	*****	.37	.43	.43
% METHGB	3.97	3.26	2.24	2.39	3.01	3.48	*****	2.59	3.10	3.10
ERYTHROCYTES (10 ⁶ /MM ³)	6.75	6.64	6.93	6.66	7.08	7.26	*****	7.20	6.75	7.11
MCV (F X 10 ³)	53.00	52.00	54.00	54.00	54.00	53.00	*****	54.00	53.00	54.00
MCH (UG)	21.10	20.00	20.40	20.00	20.00	19.00	*****	20.40	20.80	19.80
MCHC (G%)	39.60	38.60	37.60	36.60	37.90	36.80	*****	37.70	39.00	36.60
MRBC (%WBC)	.00	1.00	.00	.00	2.00	2.00	*****	1.00	1.00	2.00
RETICULOCYTES (%RBC)	4.70	3.90	7.10	1.60	4.60	*****	*****	5.50	2.60	4.90
LEUCOCYTES (10 ³ /MM ³)	7.82	5.36	8.94	8.05	10.28	12.07	*****	10.50	10.50	9.39
LYMPHOCYTES (%WBC)	81.00	71.00	92.00	86.00	91.00	83.00	*****	71.00	82.00	82.00
MONOCYTES (%WBC)	.00	.00	.00	.00	.00	.00	*****	1.00	.00	4.00
EOSINOPHILS (%WBC)	.00	1.00	.00	.00	1.00	.00	*****	2.00	1.00	1.00
BASOPHILS (%WBC)	.00	.00	.00	.00	.00	.00	*****	.00	.00	.00
PLAT. NEUTROPHILS (%WBC)	19.00	28.00	8.00	14.00	8.00	17.00	*****	26.00	17.00	13.00
IMM. NEUTROPHILS (%WBC)	.00	.00	.00	.00	.00	.00	*****	.00	.00	.00

A STRING OF ***** INDICATES NO DATA

TABLE 14-XVI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEXAMETHO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

HEMATOLOGY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	351	352	353	354	355	356	357	358	359	360
HEMATOCRIT (%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEMOGLOBIN (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MEGHS (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
* MEGHS	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
ERYTHROCYTES (10 ⁶ /MM ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MCV (U X 10 ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MCH (UG)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MCHC (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
REBC (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
RETICULOCYTES (%RBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LEUCOCYTES (10 ³ /MM ³)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LYMPHOCYTES (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MONOCYTES (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
EOSINOPHILS (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BASOPHILS (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
PAT. NEUTROPHILS (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
IMM. NEUTROPHILS (%WBC)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 15-I
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	I														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
GLUCOSE (MG %)	63.00	90.00	*****	*****	97.00	117.00	106.00	110.00	73.00	128.00	90.00	95.00	110.00	108.00	106.00
BUN (MG %)	16.00	16.00	*****	*****	20.00	21.00	18.00	16.00	21.00	20.00	17.00	19.00	23.00	24.00	16.00
SGPT (IU/L)	30.00	31.00	*****	*****	34.00	28.00	32.00	28.00	37.00	34.00	30.00	29.00	28.00	31.00	30.00
TRIGLYCERIDES (MG %)	121.00	142.00	*****	*****	207.00	274.00	125.00	157.00	201.00	235.00	161.00	140.00	252.00	241.00	165.00
TOTAL CHOLESTEROL (MG %)	204.00	131.00	*****	*****	106.00	198.00	144.00	194.00	106.00	150.00	91.00	151.00	162.00	139.00	125.00

A STRING OF ***** INDICATES NO DATA

TABLE 15-I (CON'T)

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	I													
	--													
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
GLUCOSE (MG %)	89.00	126.00	128.00	143.00	122.00	97.00	105.00	122.00	126.00	102.00	126.00	89.00	110.00	111.00
BUN (MG %)	17.00	22.00	22.00	19.00	16.00	15.00	26.00	20.00	22.00	17.00	19.00	23.00	18.00	21.00
SGPT (IU/L)	34.00	35.00	34.00	34.00	30.00	34.00	28.00	34.00	42.00	32.00	32.00	36.00	27.00	20.00
TRIGLYCERIDES (MG %)	241.00	201.00	297.00	156.00	215.00	213.00	189.00	204.00	270.00	180.00	112.00	192.00	143.00	123.00
TOTAL CHOLESTEROL (MG %)	139.00	125.00	149.00	103.00	109.00	125.00	198.00	135.00	116.00	100.00	100.00	141.00	135.00	142.00

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 15-II
 THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP	II									
	1									
TEST ANIMAL	31	32	33	34	35	36	37	38	39	40
TNT (MG/KG/DAY)										
RDX (MG/KG/DAY)										
GLUCOSE	106.00	72.00	132.00	104.00	88.00	100.00	170.00	111.00	136.00	148.00
BUN	19.00	24.00	13.00	21.00	20.00	20.00	20.00	20.00	21.00	22.00
SGPT	28.00	28.00	36.00	32.00	31.00	29.00	37.00	29.00	36.00	39.00
TRIGLYCERIDES	220.00	290.00	91.00	196.00	214.00	125.00	168.00	234.00	149.00	300.00
TOTAL CHOLESTEROL	146.00	110.00	81.00	90.00	*****	111.00	107.00	160.00	142.00	124.00

A STRING OF ***** INDICATES NO DATA

TABLE 15-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
TNT/RDX MIXTURES IN THE FISCHER RAT
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP		III									
		5									
		-									
		41	42	43	44	45	46	47	48	49	50
TNT (MG/KG/DI.Y)	TEST ANIMAL	41	42	43	44	45	46	47	48	49	50
2PX (MG/KG/DAY)	NUMBER	41	42	43	44	45	46	47	48	49	50
GLUCOSE	111.00	96.00	113.00	115.00	118.00	130.00	121.00	136.00	91.00	92.00	
UN	20.00	20.00	20.00	22.00	16.00	16.00	22.00	22.00	24.00	21.00	
SGPT	36.00	34.00	32.00	38.00	28.00	40.00	33.00	40.00	28.00	38.00	
TRIGLYCERIDES	200.00	175.00	163.00	257.00	138.00	177.00	210.00	494.00	132.00	88.00	
TOTAL CHOLESTEROL	111.00	110.00	156.00	164.00	202.00	162.00	134.00	159.00	112.00	73.00	
	(MG %)	111.00									

A STRING OF ***** INDICATES NO DATA

TABLE 15-IV
THIRTEEN WEEK OPAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP			IV 25 -									
TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	TEST ANIMAL	51	52	53	54	55	56	57	58	59	60
GLUCOSE (MG %)	93.00	110.00	87.00	86.00	105.00	106.00	108.00	129.00	129.00	129.00	129.00	111.00
BUN (MG %)	19.00	19.00	20.00	24.00	17.00	16.00	24.00	22.00	23.00	22.00	23.00	24.00
SGPT (IU/L)	34.00	32.00	28.00	26.00	26.00	22.00	26.00	29.00	29.00	29.00	29.00	27.00
TTGLYCERIDES (MG %)	150.00	144.00	119.00	111.00	201.00	217.00	178.00	224.00	244.00	224.00	244.00	223.00
TOTAL CHOLESTEROL (MG %)	150.00	142.00	159.00	200.00	238.00	162.00	182.00	200.00	166.00	200.00	166.00	142.00

A STRING OF ***** INDICATES NO DATA

TABLE 15-V
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HUXAHYDRO-1,3,5-TRINITRO-1,3,5-TETRAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP				V 125 -										
TNT (MG/KG/DAY)														
RDX (MG/KG/DAY)														
TEST ANIMAL														
NUMBER	61	62	63	64	65	66	67	68	69	70				
GLUCOSE														
(MG %)	87.00	92.00	118.00	124.00	133.00	131.00	73.00	89.00	90.00	134.00				
EJN														
(MG %)	20.00	19.00	22.00	21.00	21.00	20.00	16.00	18.00	19.00	11.00				
SGPT														
(IU/L)	12.00	20.00	25.00	24.00	23.00	21.00	18.00	26.00	34.00	10.00				
TRIGLYCERIDES														
(MG %)	256.00	229.00	337.00	295.00	404.00	246.00	271.00	147.00	196.00	179.00				
TOTAL CHOLESTEROL														
(MG %)	253.00	356.00	349.00	385.00	240.00	219.00	383.00	241.00	195.00	220.00				

A STRING OF ***** INDICATES NO DATA

TABLE 15-VI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP		VI 300								
		-								
TEST ANIMAL										
NUMBER	71	72	73	74	75	76	77	78	79	80
GLUCOSE (MG %)	85.00	84.00	88.00	110.00	106.00	114.00	140.00	117.00	150.00	100.00
BUN (MG %)	22.00	24.00	20.00	18.00	19.00	19.00	25.00	22.00	18.00	21.00
SGPT (IU/L)	38.00	20.00	22.00	28.00	80.00	30.00	24.00	24.00	98.00	30.00
TRIGLYCERIDES (MG %)	757.00	128.00	146.00	160.00	313.00	236.00	235.00	136.00	278.00	192.00
TOTAL CHOLESTEROL (MG %)	292.00	358.00	327.00	373.00	408.00	452.00	289.00	200.00	348.00	316.00

A STRING OF *** INDICATES NO DATA**

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP		VII - 10									
TNT (MG/KG/DAY)		81	82	83	84	85	86	87	88	89	90
RDX (MG/KG/DAY)	TEST ANIMAL	NUMBER									
	GLUCOSE (MG %)	113.00	118.00	101.00	118.00	134.00	123.00	95.00	118.00	96.00	98.00
	BUN (MG %)	19.00	22.00	18.00	17.00	20.00	22.00	17.00	16.00	22.00	22.00
	SGPT (IU/L)	32.00	30.00	30.00	30.00	32.00	30.00	26.00	27.00	40.00	36.00
	TRIGLYCERIDES (MG %)	238.00	200.00	130.00	121.00	173.00	166.00	162.00	84.00	246.00	132.00
	TOTAL CHOLESTEROL (MG %)	205.00	172.00	102.00	85.00	140.00	130.00	162.00	202.00	134.00	123.00

A STRING CF *** INDICATES NO DATA**

TABLE 15-VIII

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

VIII									
- 3g									
TREATMENT GROUP									
TNT (MG/KG/DAY)									
RDX (MG/KG/DAY)									
TEST ANIMAL									
NUMBER	91	92	93	94	95	96	97	98	99
GLUCOSE (MG %)	105.00	103.00	103.00	102.00	129.00	146.00	93.00	110.00	97.00
85.00									
UREA (MG %)	22.00	14.00	16.00	16.00	18.00	19.00	18.00	18.00	22.00
22.00									
SCPT (IU/L)	32.00	24.00	36.00	28.00	24.00	31.00	27.00	30.00	36.00
25.00									
TRIGLYCERIDES (MG %)	161.00	100.00	157.00	165.00	142.00	115.00	96.00	91.00	154.00
80.00									
TOTAL CHOLESTEROL (MG %)	159.00	132.00	108.00	115.00	136.00	142.00	96.00	133.00	93.00
143.00									

A STRING OF ***** INDICATES NO DATA

TABLE 15-IX
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITR-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP		IX		100		105		106		107		108		109		110	
TNT (MG/KG/DAY)		-		100		105		106		107		108		109		110	
EDX (MG/KG/DAY)		-		100		105		106		107		108		109		110	
TEST ANIMAL		-		100		105		106		107		108		109		110	
NUMBER	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117
GLUCOSE	(MG %)	*****	*****	112.00	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BUN	(MG %)	*****	*****	20.00	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SCPT	(IU/L)	*****	*****	26.00	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TRIGLYCERIDES	(MG %)	*****	*****	46.00	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL CHOLESTEROL	(MG %)	*****	*****	180.00	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 15-X
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP	TEST ANIMAL	111	112	113	114	115	116	117	118	119	120
TNT (MG/KG/DAY)		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
RDX (MG/KG/DAY)		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
GLUCOSE (MG %)	111	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BUN (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SGPT (IU/L)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TRIGLYCERIDES (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL CHOLESTEROL (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 15-XI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP		XI - 600									
TNT (MG/KG/DAY)											
RDX (MG/KG/DAY)											
TEST ANIMAL											
NUMBER	121	122	123	124	125	126	127	128	129	130	
GLUCOSE (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
BUN (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
SGPT (IU/L)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
TRIGLYCERIDES (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
TOTAL CHOLESTEROL (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 15-XII

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL	XII									
	5 30									
NUMBER	131	132	133	134	135	136	137	138	139	140
GLUCOSE (MG %)	123.00	97.00	100.00	120.00	85.00	132.00	116.00	98.00	119.00	111.00
BUN (MG %)	24.00	16.00	17.00	16.00	16.00	22.00	16.00	16.00	18.00	13.00
SGPT (IU/L)	28.00	28.00	22.00	22.00	32.00	31.00	32.00	27.00	24.00	25.00
TRIGLYCERIDES (MG %)	79.00	88.00	128.00	80.00	112.00	126.00	49.00	85.00	152.00	136.00
TOTAL CHOLESTEROL (MG %)	135.00	91.00	242.00	199.00	149.00	173.00	175.00	102.00	167.00	149.00

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 15-XIII

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP		XIII								
TNT (MG/KG/DAY)		5								
RDX (MG/KG/DAY)		300								
TEST ANIMAL										
NUMBER	141	142	143	144	145	146	147	148	149	150
GLUCOSE										
(MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BUN										
(MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SGPT										
(IU/L)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TRIGLYCERIDES										
(MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL CHOLESTEROL										
(MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 15-XIV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	151	152	153	154	155	156	157	158	159	160
GLUCOSE (MG %)	126.00	122.00	101.00	78.00	132.00	126.00	133.00	124.00	111.00	164.00
BUN (MG %)	23.00	23.00	21.00	31.00	19.00	22.00	26.00	23.00	16.00	17.00
SGPT (IU/L)	20.00	21.00	27.00	29.00	28.00	34.00	16.00	24.00	26.00	24.00
TRIGLYCERIDES (MG %)	139.00	228.00	141.00	163.00	237.00	210.00	217.00	181.00	123.00	125.00
TOTAL CHOLESTEROL (MG %)	308.00	294.00	352.00	250.00	119.00	137.00	161.00	215.00	307.00	302.00

A STRING OF ***** INDICATES NO DATA

TABLE 15-XV

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	161	162	163	164	165	166	167	168	169	170
GLUCOSE (MG %)	90.00	*****	104.00	121.00	87.00	90.00	119.00	126.00	89.00	123.00
BUN (MG %)	17.00	*****	19.00	24.00	28.00	32.00	21.00	26.00	20.00	30.00
SGPT (IU/L)	30.00	*****	18.00	20.00	27.00	30.00	24.00	21.00	22.00	32.00
TRIGLYCERIDES (MG %)	98.00	*****	132.00	113.00	83.00	96.00	71.00	298.00	84.00	274.00
TOTAL CHOLESTEROL (MG %)	166.00	*****	242.00	213.00	204.00	188.00	134.00	212.00	126.00	260.00

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 15-XVI
 THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR MALES

TREATMENT GROUP		XVI						
TNT (MG/KG/DAY)		125						
RDX (MG/KG/DAY)		300						
TEST ANIMAL								
NUMBER	171	172	173	174	175	176	177	178
GLUCOSE	(MG %)	*****	*****	*****	*****	*****	*****	*****
BUN	(MG %)	*****	*****	*****	*****	*****	*****	*****
SGPT	(IU/L)	*****	*****	*****	*****	*****	*****	*****
TRIGLYCERIDES	(MG %)	*****	*****	*****	*****	*****	*****	*****
TOTAL CHOLESTEROL	(MG %)	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 16-I

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

I
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TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195
GLUCOSE (MG %)	*****	*****	78.00	103.00	92.00	89.00	87.00	90.00	101.00	92.00	93.00	87.00	101.00	96.00	85.00
SUM (MG %)	20.00	16.00	22.00	23.00	16.00	21.00	20.00	17.00	22.00	21.00	23.00	22.00	19.00	22.00	17.00
SUPT (IU/L)	45.00	36.00	40.00	34.00	25.00	30.00	38.00	36.00	27.00	38.00	46.00	44.00	27.00	32.00	44.00
TRIGLYCERIDES (MG %)	96.00	84.00	71.00	61.00	75.00	119.00	122.00	102.00	89.00	91.00	90.00	116.00	100.00	104.00	110.00
TOTAL CHOLESTEROL (MG %)	361.00	190.00	131.00	121.00	102.00	109.00	122.00	124.00	191.00	157.00	164.00	144.00	97.00	119.00	156.00
TOTAL PROTEIN (G %)	12.30	10.70	9.30	8.30	9.90	10.60	11.10	11.30	10.30	9.90	9.20	9.60	10.50	9.80	10.60
ALBUMIN (G %)	6.90	6.80	5.00	5.40	6.30	6.40	6.00	6.20	5.40	5.40	5.90	6.50	6.80	6.30	6.80
GLOBULIN (G %)	5.40	3.90	4.30	2.90	3.60	4.20	5.10	5.10	4.90	4.50	3.30	3.10	3.70	3.50	3.80
A/G RATIO	1.28	1.74	1.16	1.86	1.75	1.52	1.18	1.22	1.10	1.20	1.79	2.10	1.84	1.80	1.79

2 STRING OF ***** INDICATES NO DATA

TABLE 16-I(CON'T)

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	I —													
	196	197	199	200	201	202	203	204	205	206	207	208	209	210
GLUCOSE (MG %)	157.55	157.55	159.55	91.55	102.55	93.55	95.55	71.55	96.55	98.55	98.55	107.55	103.55	85.55
ALBUMIN (MG %)	14.55	23.55	25.55	17.55	18.55	15.55	25.55	18.55	17.55	16.55	26.55	27.55	18.55	17.55
SGPT (IU/L)	32.55	38.55	42.55	32.55	51.55	34.55	38.55	24.55	26.55	26.55	42.55	36.55	28.55	30.55
TRIGLYCERIDES (MG %)	75.55	75.55	92.55	85.55	85.55	73.55	116.55	146.55	62.55	64.55	114.55	151.55	144.55	132.55
TOTAL CHOLESTEROL (MG %)	145.55	258.55	214.55	122.55	126.55	160.55	116.55	112.55	76.55	102.55	213.55	211.55	163.55	174.55
TOTAL PROTEIN (G%)	11.95	11.45	10.75	11.65	10.75	10.35	9.15	7.85	10.35	10.35	11.15	11.35	10.95	11.55
ALBUMIN (G%)	6.85	6.55	5.75	6.65	6.75	6.75	5.85	5.15	6.45	6.45	5.85	6.15	6.15	6.25
GLOBULIN (G%)	5.15	5.45	5.55	5.55	4.55	3.65	3.35	2.75	3.95	3.95	5.35	5.25	4.85	4.85
A/G RATIO	1.33	1.11	1.14	1.32	1.67	1.86	1.76	1.89	1.64	1.64	1.09	1.17	1.27	1.29

A STRING OF ***** INDICATES NO DATA

TABLE 16-II

L61116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

II

1

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TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	211	212	213	214	215	216	217	218	219	220
GLUCOSE (MG %)	100.00	97.00	106.00	85.00	103.00	100.00	92.00	97.00	96.00	93.00
BUN (MG %)	21.00	23.00	18.00	24.00	16.00	19.00	22.00	20.00	19.00	18.00
SGPT (IU/L)	46.00	36.00	42.00	42.00	34.00	30.00	54.00	42.00	22.00	24.00
TRIGLYCERIDES (MG %)	145.00	100.00	193.00	83.00	153.00	151.00	108.00	118.00	57.00	70.00
TOTAL CHOLESTEROL (MG %)	179.00	180.00	79.00	100.00	152.00	160.00	137.00	143.00	99.00	102.00
TOTAL PROTEIN (G%)	10.10	10.00	7.00	8.00	11.50	12.30	9.90	10.50	10.90	9.60
ALBUMIN (G%)	5.40	5.50	4.90	4.90	6.40	6.50	6.40	6.60	7.00	6.10
GLOBULIN (G%)	4.70	4.50	2.10	3.10	5.10	5.80	3.50	3.90	3.90	3.50
A/G RATIO	1.15	1.22	2.33	1.58	1.25	1.12	1.83	1.69	1.79	1.74

A STRING OF ***** INDICATES NO DATA

TABLE 16-III

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP		III							
TNT (MG/KG/DAY)		5							
RDX (MG/KG/DAY)		-							
TEST ANIMAL									
NUMBER	221	222	223	224	225	226	227	228	229
GLUCOSE	84.88	188.88	99.88	93.88	85.88	124.88	95.88	74.88	55.88
(MG %)									
BUN	(MG %)	28.88	14.88	18.88	23.88	22.88	16.88	28.88	22.88
SGPT	(IU/L)	32.88	18.88	28.88	38.88	29.88	32.88	36.88	52.88
TRIGLYCERIDES	(MG %)	89.88	52.88	85.88	78.88	129.88	55.88	87.88	101.88
TOTAL CHOLESTEROL	(MG %)	165.88	128.88	106.88	225.88	383.88	212.88	158.88	62.88
TOTAL PROTEIN	(G%)	13.48	18.68	13.38	18.48	16.38	18.78	9.98	*****
ALBUMIN	(G%)	5.28	5.78	8.38	6.68	6.48	6.68	6.48	*****
GLOBULIN	(G%)	7.28	4.98	5.88	3.88	5.18	4.18	3.58	*****
A/G RATIO		.86	1.16	1.66	1.74	1.25	1.61	1.83	*****
									1.64

A STRING OF ***** INDICATES NO DATA

TABLE 16-IV

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

IV
25

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	231	232	233	234	235	236	237	238	239	240
GLUCOSE (MG %)	86.88	87.88	103.88	83.88	116.88	101.88	71.88	87.88	89.88	96.88
BUN (MG %)	19.88	20.88	19.88	17.88	21.88	25.88	18.88	20.88	18.88	18.88
SGPT (IU/L)	42.88	42.88	28.88	27.88	46.88	36.88	44.88	36.88	24.88	25.88
TRIGLYCERIDES (MG %)	93.88	104.88	118.88	123.88	103.88	99.88	76.88	107.88	84.88	83.88
TOTAL CHOLESTEROL (MG %)	217.88	195.88	190.88	185.88	252.88	218.88	152.88	133.88	137.88	125.88
TOTAL PROTEIN (G%)	10.68	11.68	*****	12.18	11.58	11.68	8.68	8.28	11.48	11.58
ALBUMIN (G%)	6.88	6.98	6.78	6.68	6.18	6.88	5.68	5.88	6.98	7.18
GLOBULIN (G%)	3.88	4.78	*****	5.58	5.48	5.68	3.88	3.28	4.58	4.48
A/G RATIO	1.79	1.47	*****	1.28	1.13	1.87	1.87	1.56	1.53	1.61

A STRING OF ***** INDICATES NO DATA

TABLE 16-V

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP	TNT (MG/KG/DAY)	RDX (MG/KG/DAY)	TEST ANIMAL NUMBER	V									
				241	242	243	244	245	246	247	248	249	250
GLUCOSE (MG %)	88.00	92.00	113.00	79.00	112.00	59.00	*****	*****	*****	*****	*****	53.00	93.00
BUN (MG %)	19.00	22.00	22.00	23.00	20.00	21.00	20.00	20.00	21.00	20.00	20.00	21.00	21.00
SGPT (IU/L)	38.00	30.00	34.00	27.00	26.00	24.00	52.00	34.00	27.00	27.00	27.00	27.00	27.00
TRIGLYCERIDES (MG %)	126.00	129.00	67.00	110.00	150.00	87.00	115.00	144.00	83.00	126.00	126.00	126.00	126.00
TOTAL CHOLESTEROL (MG %)	506.00	229.00	259.00	215.00	329.00	366.00	221.00	349.00	218.00	216.00	216.00	216.00	216.00
TOTAL PROTEIN (G%)	10.80	9.80	9.40	8.40	13.40	12.40	11.80	11.20	10.50	10.40	10.40	10.40	10.40
ALBUMIN (G%)	6.00	6.10	6.00	4.80	6.80	6.80	7.30	7.10	6.80	6.20	6.20	6.20	6.20
GLOBULIN (G%)	4.80	3.70	3.40	3.60	6.60	5.60	4.50	4.10	3.70	4.20	4.20	4.20	4.20
A/G RATIO	1.25	1.65	1.76	1.33	1.03	1.21	1.62	1.73	1.84	1.48	1.48	1.48	1.48

A STRING OF ***** INDICATES NO DATA

TABLE 16-VI

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/PDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	251	252	253	254	255	256	257	258	259	260
GLUCOSE (MG %)	105.00	87.00	104.00	81.00	75.00	95.00	82.00	95.00	96.00	1.00
BUN (MG %)	24.00	29.00	28.00	25.00	27.00	24.00	23.00	23.00	24.00	22.00
SGPT (IU/L)	36.00	40.00	44.00	30.00	40.00	32.00	20.00	20.00	30.00	28.00
TRIGLYCERIDES (MG %)	173.00	122.00	112.00	120.00	128.00	106.00	120.00	130.00	132.00	115.00
TOTAL CHOLESTEROL (MG %)	375.00	416.00	425.00	425.00	212.00	230.00	205.00	197.00	350.00	299.00
TOTAL PROTEIN (G%)	11.30	12.20	12.00	11.30	9.10	11.30	10.80	11.90	12.50	11.20
ALBUMIN (G%)	6.20	7.00	6.40	5.80	6.20	7.50	6.40	6.90	6.00	6.00
GLOBULIN (G%)	5.10	5.20	5.60	5.50	2.90	3.80	4.40	5.00	6.50	5.20
A/G RATIO	1.22	1.35	1.14	1.05	2.14	1.97	1.45	1.38	.92	1.15

A STRING OF ***** INDICATES NO DATA

TABLE 16-VII

L61116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP		VII									
TNT (MG/KG/DAY)		-									
RDX (MG/KG/DAY)		10									
TEST ANIMAL											
NUMBER	261	262	263	264	265	265	267	268	269	270	
GLUCOSE	85.00	132.00	96.00	100.00	74.00	86.00	78.00	79.00	103.00	85.00	
(MG %)											
SUN	17.00	15.00	20.00	16.00	23.00	16.00	24.00	23.00	21.00	24.00	
(MG %)											
SGPT	30.00	42.00	32.00	22.00	36.00	22.00	40.00	50.00	36.00	32.00	
(IU/L)											
TRIGLYCERIDES	83.00	65.00	80.00	77.00	138.00	68.00	111.00	76.00	58.00	102.00	
(MG %)											
TOTAL CHOLESTEROL	131.20	165.00	98.00	100.00	111.00	125.00	198.00	223.00	131.00	98.00	
(MG %)											
TOTAL PROTEIN	10.70	10.90	10.30	9.70	*****	11.00	10.60	10.80	9.10	9.10	
(G%)											
ALBUMIN	6.50	6.50	6.50	5.60	*****	6.00	5.60	5.80	5.90	5.40	
(G%)											
GLOBULIN	4.20	4.40	3.80	4.10	*****	5.00	5.00	5.00	3.20	3.70	
(G%)											
A/G RATIO	1.55	1.48	1.71	1.37	*****	1.20	1.12	1.16	1.84	1.46	

A STRING OF ***** INDICATES NO DATA

TABLE 16-VIII

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT);
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP		VIII - 30							
TNT (MG/KG/DAY)	271	272	273	274	275	276	277	278	279
RDX (MG/KG/DAY)	271	272	273	274	275	276	277	278	279
TEST ANIMAL	271	272	273	274	275	276	277	278	279
GLUCOSE	78.00	124.00	94.00	82.00	88.00	103.00	90.00	87.00	100.00
SUM	18.00	22.00	12.00	24.00	18.00	20.00	22.00	21.00	16.00
SGPT	28.00	38.00	24.00	27.00	34.00	26.00	26.00	32.00	26.00
TRIGLYCERIDES	81.00	68.00	58.00	65.00	52.00	74.00	72.00	63.00	91.00
TOTAL CHOLESTEROL	131.00	125.00	114.00	116.00	136.00	166.00	480.00	173.00	153.00
TOTAL PROTEIN	8.30	8.10	11.30	9.00	10.00	9.60	11.20	10.30	11.30
ALBUMIN	5.10	5.00	7.20	5.50	6.40	5.90	5.70	5.30	6.00
GLOBULIN	3.20	3.10	4.10	3.50	3.60	3.70	5.50	5.00	5.30
A/G RATIO	1.59	1.61	1.76	1.57	1.78	1.59	1.04	1.06	1.13

A STRING OF ***** INDICATES NO DATA

TABLE 16-IX

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/PDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP		IX - 100									
TMT (MG/KG/DAY)											
RDX (MG/KG/DAY)											
TEST ANIMAL											
NUMBER	281	282	283	284	285	286	287	288	289	290	
GLUCOSE	(MG %)	108.00	92.00	81.00	*****	90.00	*****	*****	*****	67.00	
SUN	(MG %)	20.00	19.00	25.00	*****	20.00	*****	*****	*****	19.00	
SGPT	(IU/L)	46.00	24.00	27.00	*****	20.00	*****	*****	*****	26.00	
TRIGLYCERIDES	(MG %)	55.00	55.00	40.00	*****	48.00	*****	*****	*****	46.00	
TOTAL CHOLESTEROL	(MG %)	158.00	98.00	116.00	*****	113.00	*****	*****	*****	128.00	
TOTAL PROTEIN	(G%)	*****	11.50	12.10	*****	10.80	*****	*****	*****	10.10	
ALBUMIN	(G%)	*****	6.90	5.90	*****	6.20	*****	*****	*****	6.50	
GLOBULIN	(G%)	*****	4.60	6.20	*****	4.60	*****	*****	*****	3.60	
A/G RATIO	*****	1.50	.95	*****	*****	1.35	*****	*****	*****	1.31	

A STRING OF ***** INDICATES NO DATA

TABLE 16-X

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (BDX) AND TNT/PDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) PDX (MG/KG/DAY) TEST ANIMAL NUMBER	291	292	293	294	295	296	297	298	299	300
GLUCOSE (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BUN (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SGPT (IU/L)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TRIGLYCERIDES (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL CHOLESTEROL (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL PROTEIN (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
ALBUMIN (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
GLOBULIN (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
A/G RATIO	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 16-XI

L61116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP		XI									
TNT (MG/KG/DAY)		- 600									
RDX (MG/KG/DAY)											
TEST ANIMAL											
NUMBER	381	382	383	384	385	386	387	388	389	310	
GLUCOSE (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BUN (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SGPT (IU/L)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TRIGLYCERIDES (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL CHOLESTEROL (MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL PROTEIN (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
ALBUMIN (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
GLOBULIN (G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
L/G RATIO	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 16-XII

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	XII									
	538									
TEST ANIMAL NUMBER	311	312	313	314	315	316	317	318	319	328
GLUCOSE (MG %)	87.88	108.88	97.88	94.88	81.88	126.88	95.88	88.88	93.88	89.88
BUN (MG %)	17.88	18.88	22.88	23.88	17.88	18.88	16.88	18.88	22.88	18.88
SGPT (IU/L)	22.88	28.88	38.88	48.88	38.88	24.88	36.88	34.88	32.88	26.88
TRIGLYCERIDES (MG %)	43.88	81.88	57.88	72.88	82.88	94.88	96.88	61.88	74.88	43.88
TOTAL CHOLESTEROL (MG %)	116.88	118.88	226.88	289.88	158.88	169.88	158.88	138.88	119.88	118.88
TOTAL PROTEIN (G%)	8.68	18.68	18.98	18.68	18.98	11.28	18.28	13.18	8.18	14.48
ALBUMIN (G%)	5.58	6.58	5.78	5.78	6.18	6.38	6.18	6.18	5.28	6.88
GLOBULIN (G%)	3.18	4.18	5.28	4.98	4.88	4.98	4.18	4.88	2.98	3.68
A/G RATIO	1.77	1.59	1.18	1.16	1.27	1.29	1.49	1.53	1.79	1.89

A STRING OF ***** INDICATES NO DATA

TABLE 16-XIII

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAMETHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/PDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP		XIII							
TNT (MG/KG/DAY)		5							
RDX (MG/KG/DAY)		300							
TEST ANIMAL									
NUMBER	321	322	323	324	325	326	327	328	329
GLUCOSE	(MG %)	*****	*****	*****	*****	*****	*****	*****	*****
BUN	(MG %)	*****	*****	*****	*****	*****	*****	*****	*****
SGPT	(IU/L)	*****	*****	*****	*****	*****	*****	*****	*****
TRIGLYCERIDES	(MG %)	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL CHOLESTEROL	(MG %)	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL PROTEIN	(G%)	*****	*****	*****	*****	*****	*****	*****	*****
ALBUMIN	(G%)	*****	*****	*****	*****	*****	*****	*****	*****
GLOBULIN	(G%)	*****	*****	*****	*****	*****	*****	*****	*****
A/G RATIO	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 16-XIV

L61116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP	XIV									
	125									
TEST ANIMAL	30									
NUMBER	331	332	333	334	335	336	337	338	339	340
TNT (MG/KG/DAY)										
RDX (MG/KG/DAY)										
GLUCOSE (MG %)	72.00	77.00	96.00	119.00	86.00	84.00	72.00	72.00	65.00	75.00
BUN (MG %)	19.00	22.00	25.00	25.00	20.00	26.00	23.00	18.00	20.00	21.00
SGPT (IU/L)	36.00	32.00	22.00	36.00	22.00	34.00	18.00	24.00	27.00	32.00
TRIGLYCERIDES (MG %)	100.00	132.00	86.00	107.00	100.00	100.00	76.00	96.00	90.00	94.00
TOTAL CHOLESTEROL (MG %)	235.00	309.00	365.00	348.00	257.00	277.00	176.00	215.00	265.00	262.00
TOTAL PROTEIN (G%)	10.00	10.70	*****	11.50	11.10	12.80	9.50	11.70	10.50	11.10
ALBUMIN (G%)	6.30	6.40	*****	6.00	6.10	7.00	6.00	7.40	6.40	6.70
GLOBULIN (G%)	3.70	4.30	*****	5.50	5.00	5.80	3.50	4.30	4.10	4.40
A/G RATIO	1.70	1.49	*****	1.09	1.22	1.21	1.71	1.72	1.56	1.52

A STRING OF ***** INDICATES NO DATA

TABLE 16-XV

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	XV			XV			XV		
	341	342	343	344	345	346	347	348	349
GLUCOSE (MG %)	67.88	84.88	103.88	69.88	119.88	151.88	*****	73.88	95.88
BUN (MG %)	27.88	26.88	19.88	16.88	26.88	27.88	*****	21.88	16.88
SGPT (IU/L)	28.88	27.88	32.88	28.88	38.88	36.88	*****	27.88	22.88
TRIGLYCERIDES (MG %)	82.88	44.88	61.88	51.88	96.88	132.88	*****	76.88	81.88
TOTAL CHOLESTEROL (MG %)	178.88	151.88	252.88	187.88	306.88	315.88	*****	132.88	168.88
TOTAL PROTEIN (G%)	8.88	8.48	12.78	10.88	13.78	*****	*****	9.68	*****
ALBUMIN (G%)	6.28	5.58	7.78	7.18	6.48	*****	*****	6.28	*****
GLOBULIN (G%)	2.68	2.98	5.08	3.78	7.38	*****	*****	3.48	*****
A/G RATIO	2.38	1.98	1.54	1.92	.88	*****	*****	1.82	*****

A STRING OF ***** INDICATES NO DATA

TABLE 16-XVI

L6116/L6121, STUDY NO.1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

CLINICAL CHEMISTRY VALUES FOR FEMALES

TREATMENT GROUP		XVI									
TNT (MG/KG/DAY)		125									
RDX (MG/KG/DAY)		300									
TEST ANIMAL											
NUMBER	351	352	353	354	355	356	357	358	359	360	
GLUCOSE	(MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BUN	(MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SGPT	(IU/L)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TRIGLYCERIDES	(MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL CHOLESTEROL	(MG %)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL PROTEIN	(G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
ALBUMIN	(G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
GLOBULIN	(G%)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
A/G RATIO	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 17-I
THIRTEEN WEEK OPAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TERMINAL BODY WEIGHT 265.0		313.0	321.0	281.0	279.0	338.0	316.0	292.0	302.0	277.0	288.0	299.0	287.0	295.0	307.0
BRAIN 1.550		1.967	2.014	1.867	1.911	1.977	1.929	1.882	1.993	1.997	1.971	1.701	1.994	2.043	1.943
LIVER 8.376		9.237	9.758	8.518	9.520	10.986	10.667	9.327	8.711	8.167	8.575	11.056	8.502	7.936	10.455
KIDNEY 2.159		1.033	2.853	2.638	2.468	2.667	2.659	2.350	2.500	2.349	2.207	2.559	2.232	2.222	2.629
HEART .876		2.501	.990	.928	1.014	.978	1.038	.926	1.065	.884	.966	.960	.909	.950	.909
SPLEEN .689		.652	.636	.598	.627	.691	.643	.649	.622	.589	.598	.585	.701	3.820	.675
TESTES 2.951		3.138	3.144	2.571	2.883	2.978	3.216	3.000	3.249	2.883	3.045	3.116	2.860	2.813	2.931

A STRING OF ***** INDICATES NO DATA

TABLE 17-I(CON'T)
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

		I —														
TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
TERMINAL BODY WEIGHT 303.0		263.0	263.0	264.0	277.0	294.0	238.0	353.0	274.0	252.0	311.0	297.0	294.0	278.0	263.0	226.0
BRAIN 1.902		1.915	1.760	1.726	1.726	1.850	1.757	2.076	1.757	1.890	1.724	1.960	1.854	1.988	1.958	1.616
LIVER 10.601		8.224	8.627	8.444	8.444	9.637	8.100	11.036	8.706	7.871	8.713	10.530	8.061	8.281	6.277	7.170
KIDNEY 2.469		2.227	2.362	2.420	2.420	2.344	2.251	2.960	2.540	2.162	2.440	2.695	2.014	2.070	2.077	2.352
HEART .822		.894	.949	.952	.952	.961	.935	1.047	.939	.778	1.040	.913	.995	.893	.930	.865
SPLEEN .649		.720	.710	.575	.575	.543	.545	.661	.533	.524	.736	.622	.606	.660	.816	1.224
TESTES 2.934		2.912	2.842	3.041	3.041	2.918	2.855	3.209	3.030	2.894	2.978	2.907	2.857	2.858	2.663	2.671
A STRING OF ***** INDICATES NO DATA																

A STRING OF ***** INDICATES NO DATA

TABLE 17-II
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

II
1 -

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	31	32	33	34	35	36	37	38	39	40
TERMINAL BODY WEIGHT	285.0	280.0	276.0	280.0	296.0	274.0	287.0	280.0	297.0	280.0
BRAIN	1.983	1.878	1.724	1.957	1.891	1.744	1.883	1.856	1.930	1.997
LIVER	8.655	9.034	8.606	9.146	10.144	8.213	10.721	8.786	9.511	8.712
KIDNEY	2.361	2.093	2.240	2.573	2.548	2.332	2.463	2.301	2.730	2.196
HEART	.950	.863	.671	1.158	.935	.897	.889	.905	.959	.980
SPLEEN	.841	.579	.646	.865	.553	.590	.600	.555	.613	.465
TESTES	2.866	2.744	3.042	2.899	2.720	2.778	2.944	2.908	2.824	2.788

A STRING OF ***** INDICATES NO DATA

TABLE 17-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

		III							
		5							
		-							
TREATMENT GROUP	41	42	43	44	45	46	47	48	49
TNT (MG/KG/DAY)									
RDX (MG/KG/DAY)									
TEST ANIMAL									
NUMBER	41	42	43	44	45	46	47	48	49
TERMINAL BODY WEIGHT	266.0	272.0	286.0	283.0	295.0	276.0	292.0	284.0	297.0
BRAIN	1.885	1.804	1.751	1.681	2.057	2.000	1.955	1.905	1.776
LIVER	8.510	8.924	9.866	8.882	9.057	8.940	9.511	9.160	10.419
KIDNEY	2.313	2.286	2.488	2.186	2.607	2.437	2.277	2.289	2.589
HEART	.870	.853	.914	.839	.938	.888	1.024	.840	.942
SPLEEN	.713	.646	.594	.534	.596	.634	.739	.607	.622
TESTES	2.817	2.952	2.971	2.726	3.050	2.908	2.922	2.663	3.016

A STRING OF ***** INDICATES NO DATA

TABLE 17-IV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

IV
25

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	51	52	53	54	55	56	57	58	59	60
TERMINAL BODY WEIGHT	271.0	265.0	263.0	290.0	276.0	271.0	294.0	220.0	302.0	303.0
BRAIN	1.850	1.907	1.847	1.925	1.804	1.788	1.664	1.804	1.827	1.864
LIVER	10.154	8.360	9.224	11.103	8.625	10.566	10.218	7.888	9.673	10.403
KIDNEY	2.488	2.226	2.446	2.685	2.084	2.495	2.525	2.105	2.646	2.723
HEART	.884	.888	.845	.920	1.040	.921	.924	.775	.914	.939
SPLEEN	.645	.643	.609	.594	.749	.818	.740	.572	.644	.666
TESTES	3.012	2.920	2.905	2.881	3.149	3.000	3.022	2.673	3.038	3.085

A STRING OF ***** INDICATES NO DATA

TABLE 17-V
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP		V									
TNT (MG/KG/DAY)		125									
RDX (MG/KG/DAY)		-									
TEST ANIMAL	NUMBER	61	62	63	64	65	66	67	68	69	70
TERMINAL BODY WEIGHT	259.8	257.8	252.8	231.8	212.8	259.8	265.8	288.8	249.8	235.8	
BRAIN	1.828	1.845	1.924	1.858	1.811	1.797	1.756	2.893	1.858	1.896	
LIVER	18.888	18.966	18.593	9.978	8.674	11.393	11.244	13.372	11.844	9.412	
KIDNEY	2.441	2.519	2.281	2.851	1.952	2.586	2.254	2.888	2.450	1.953	
HEART	.824	.889	.783	.824	.755	.866	.857	.991	.936	.780	
SPLEEN	.763	.851	.897	1.183	.859	.783	.891	1.839	.934	.906	
TESTES	2.556	2.841	2.474	1.841	2.346	2.422	2.454	3.898	2.888	2.426	

A STRING OF ***** INDICATES NO DATA

TABLE 17-VI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	71	72	73	74	75	76	77	78	79	80
TERMINAL BODY WEIGHT	224.0	156.0	188.0	221.0	210.0	215.0	227.0	*****	227.0	242.0
BRAIN	1.849	1.680	1.795	1.841	1.745	1.682	1.802	*****	1.744	1.943
LIVER	12.251	8.123	9.787	10.480	11.905	11.330	11.527	*****	12.220	12.631
KIDNEY	2.193	1.794	1.898	2.027	2.190	2.087	2.398	*****	2.053	2.376
HEART	.812	.643	.633	.781	.752	.863	.771	*****	.844	.891
SPLEEN	2.324	1.399	1.703	2.181	2.508	2.400	2.112	*****	2.390	2.251
TESTES	.956	.844	.932	.676	1.000	.840	.734	*****	.844	1.008

A STRING OF ***** INDICATES NO DATA

TABLE 17-VII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY)		VII - 10							
		81	82	83	84	85	86	87	88
TEST ANIMAL NUMBER		81	82	83	84	85	86	87	88
TERMINAL BODY WEIGHT		257.0	297.0	255.0	252.0	322.0	275.0	290.0	299.0
BRAIN		1.770	1.744	1.926	1.788	2.047	1.978	1.835	1.987
LIVER		8.702	10.398	7.618	8.846	11.560	9.069	8.746	9.795
KIDNEY		2.516	2.660	2.085	2.446	1.614	2.209	2.671	2.653
HEART		.900	1.056	.994	.944	1.063	.958	.950	.977
SPLEEN		.573	.717	.640	.559	.665	.678	.643	.671
TESTES		2.892	3.210	2.623	2.913	3.295	2.940	3.068	2.979

A STRING OF ***** INDICATES NO DATA

3.002

2.737

TABLE 17-VIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/PDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP		VIII								
TNT (MG/KG/DAY)		30								
PDX (MG/KG/DAY)										
TEST ANIMAL										
NUMBER	91	92	93	94	95	96	97	98	99	100
TERMINAL BODY WEIGHT	288.0	270.0	230.0	257.0	284.0	291.0	256.0	280.0	234.0	250.0
BRAIN	2.003	1.007	1.715	1.687	1.975	2.043	1.881	1.957	1.919	1.932
LIVER	11.020	8.647	8.296	9.136	8.577	8.487	8.524	9.286	9.201	7.992
KIDNEY	2.511	2.180	2.395	2.178	2.602	2.319	2.059	2.521	2.630	2.370
HEART	.994	.866	.816	.906	.906	.963	.828	.917	.946	.874
SPLEEN	.609	.521	.536	.667	.884	.688	.612	.574	.603	.536
TESTES	3.132	2.796	2.879	2.858	3.011	2.940	2.763	2.813	3.043	2.821

A STRING OF ***** INDICATES NO DATA

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER PAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP		IX.									
TNT (MG/KG/DAY)		-									
RDX (MG/KG/DAY)		100									
TEST ANIMAL	TEST ANIMAL	101	102	103	104	105	106	107	108	109	110
TERMINAL BODY WEIGHT		*****	*****	*****	244.8	*****	*****	*****	*****	*****	229.0
BRAIN	*****	*****	*****	*****	1.843	*****	*****	*****	*****	*****	1.695
LIVER	*****	*****	*****	*****	9.311	*****	*****	*****	*****	*****	8.453
KIDNEY	*****	*****	*****	*****	2.245	*****	*****	*****	*****	*****	2.042
HEART	*****	*****	*****	*****	.939	*****	*****	*****	*****	*****	.736
SPLEEN	*****	*****	*****	*****	.531	*****	*****	*****	*****	*****	.475
TESTES	*****	*****	*****	*****	2.942	*****	*****	*****	*****	*****	2.852

A STRING OF ***** INDICATE NO DATA

L6116/L6121, STUDY NO.1

TABLE 17-X
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP		X - 383									
TNT (MG/KG/DAY)											
RDX (MG/KG/DAY)											
TEST ANIMAL											
NUMBER	111	112	113	114	115	116	117	118	119	120	
TERMINAL BODY WEIGHT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
TESTES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	

A STRING OF ***** INDICATES NO DATA

TABLE 17-XI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP		XI - 600									
TNT (MG/KG/DAY)											
RDX (MG/KG/DAY)											
TEST ANIMAL	NUMBER	121	122	123	124	125	126	127	128	129	130
TERMINAL BODY WEIGHT		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TESTES		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 17-XII
THIRTEEN WEEK ORAL (DIFF. TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP		XII								
TNT (MG/KG/DAY)		5								
RDX (MG/KG/DAY)		30								
TEST ANIMAL										
NUMBER	131	132	133	134	135	136	137	138	139	140
TERMINAL BODY WEIGHT	248.0	220.0	288.0	252.0	260.0	250.0	175.0	254.0	269.0	229.0
BRF	1.661	1.710	1.807	2.002	1.726	1.705	1.622	1.782	2.050	1.791
LIVER	9.389	7.818	9.996	8.811	8.201	8.647	6.048	8.965	8.043	9.137
KIDNEY	2.169	.808	2.566	2.419	2.312	2.159	1.783	2.210	2.246	2.196
HEART	.821	2.070	.914	.876	.827	.843	.695	.861	.899	.832
SPLEEN	.531	.709	.823	.963	.565	.558	.461	.648	.740	.514
TESTES	2.756	2.703	3.155	2.787	2.724	2.987	2.716	2.669	2.838	2.820

A STRING OF ***** INDICATES NO DATA

TABLE 17-XIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP		XIII									
TNT (MG/KG/DAY)		5									
RDX (MG/KG/DAY)		300									
TEST ANIMAL	NUMBER	141	142	143	144	145	146	147	148	149	150
TERMINAL BODY WEIGHT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TESTES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 17-XIV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	151	152	153	154	155	156	157	158	159	160
TERMINAL BODY WEIGHT	210.0	233.0	232.0	212.0	212.0	212.0	243.0	203.0	238.0	196.0
BRAIN	1.811	1.828	1.787	1.764	1.846	1.691	1.807	1.845	1.862	1.833
LIVER	10.100	11.683	9.7	9.410	8.939	9.891	10.943	8.976	11.368	11.973
KIDNEY	1.977	2.318	2.506	1.924	2.171	1.880	2.471	2.204	2.283	2.400
HEART	.730	.835	.834	.732	.855	.792	.817	.791	.911	.833
SPLEEN	.609	.769	.793	.780	.821	1.084	1.062	.782	.755	.835
TESTES	2.884	3.027	3.047	2.778	3.041	2.765	3.072	2.818	2.947	3.154

A STRING OF ***** INDICATES NO DATA

TABLE 17-XV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY)	TEST ANIMAL NUMBER	XV									
		161	162	163	164	165	166	167	168	169	170
TERMINAL BODY WEIGHT	203.0	*****	*****	242.0	224.0	203.0	*****	211.0	200.0	221.0	174.0
BRAIN	1.873	*****	*****	1.737	1.864	1.874	*****	1.802	1.930	1.957	1.858
LIVER	10.209	*****	*****	10.003	10.327	10.858	*****	10.171	10.426	11.493	8.194
KIDNEY	1.975	*****	*****	1.936	2.370	2.297	*****	2.161	2.051	2.110	1.711
HEART	.726	*****	*****	.737	.777	.721	*****	.777	.827	.769	.703
SPLEEN	.734	*****	*****	.507	.770	.619	*****	.651	.758	.660	.422
TESTES	2.763	*****	*****	2.957	2.992	2.690	*****	2.850	2.933	2.802	2.650

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 17-XVI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR MALES (G)

TREATMENT GROUP		XVI									
TNT (MG/KG/DAY)		125									
RDX (MG/KG/DAY)		300									
TEST ANIMAL											
NUMBER	171	172	173	174	175	176	177	178	179	180	
TERMINAL BODY WEIGHT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
TESTES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	

A STRING OF ***** INDICATES NO DATA

TABLE 18-I
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	I														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TERMINAL BODY WEIGHT (G) 265.0	313.0	321.0	281.0	316.0	338.0	279.0	302.0	277.0	288.0	299.0	287.0	285.0	307.0		
BRAIN .585	.628	.627	.664	.585	.685	.610	.645	.721	.684	.569	.695	.719	.633		
LIVER 3.161	2.951	3.040	3.031	3.250	3.412	3.376	3.194	2.948	2.977	3.698	2.962	2.785	3.406		
KIDNEY .815	.330	.880	.939	.789	.885	.841	.805	.828	.848	.766	.856	.778	.856		
HEART .331	.799	.308	.330	.289	.363	.328	.317	.319	.335	.321	.317	.335	.296		
SPLEEN .260	.208	.198	.213	.204	.225	.203	.222	.213	.208	.196	.244	1.340	.220		
TESTES 1.114	1.003	.979	.915	.881	1.033	1.018	1.027	1.076	1.041	1.057	.997	.987	.955		

A STRING OF ***** INDICATES NO DATA

TABLE 18-1(CON'T)

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER PAT

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER		RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)														
		I														
		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
TERMINAL BODY WEIGHT (G)		303.0	263.0	264.0	277	294.0	238.0	351.0	274.0	252.0	311.0	297.0	294.0	278.0	263.0	226.0
BRAIN		.628	.728	.667	.623	.529	.738	.588	.641	.750	.554	.660	.631	.715	.705	.715
LIVER		3.499	3.127	3.268	3.048	3.278	3.403	3.126	3.177	3.123	2.802	3.545	2.742	2.979	2.425	3.173
KIDNEY		.815	.847	.895	.874	.797	.946	.839	.927	.858	.785	.907	.685	.745	.771	1.041
HEART		.271	.340	.359	.344	.327	.393	.297	.343	.309	.334	.307	.338	.321	.315	.383
SPLEEN		.214	.274	.269	.208	.185	.229	.187	.195	.208	.237	.209	.206	.237	.310	.542
TESTES		.968	1.107	1.077	1.098	.993	1.200	.909	1.106	1.149	.958	.979	.972	1.028	1.014	1.102

A STRING OF ***** INDICATES NO DATA

TABLE 18-II
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	31	32	33	34	35	36	37	38	39	40
TERMINAL BODY WEIGHT (G)	285.0	280.0	276.0	280.0	296.0	274.0	287.0	280.0	297.0	288.0
BRAIN	.696	.671	.625	.699	.639	.636	.656	.663	.650	.693
LIVER	3.037	3.226	3.118	3.266	3.427	2.997	3.736	3.138	3.202	3.025
KIDNEY	.828	.747	.812	.919	.861	.851	.858	.822	.919	.762
HEART	.333	.308	.243	.414	.316	.327	.310	.323	.323	.340
SPLEEN	.295	.207	.234	.309	.187	.212	.209	.198	.206	.161
TESTES	1.006	.980	1.102	1.035	.919	1.014	1.026	1.039	.951	.968

A STRING OF ***** INDICATES NO DATA

TABLE 18-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP		III									
TNT (MG/KG/DAY)		5									
RDX (MG/KG/DAY)		-									
TEST ANIMAL	41	42	43	44	45	46	47	48	49	50	
NUMBER											
TERMINAL BODY WEIGHT (G)	266.0	272.0	286.0	283.0	295.0	276.0	292.0	284.0	297.0	210.0	
BRAIN	.709	.663	.612	.594	.697	.725	.670	.671	.598	.250	
LIVER	3.199	3.281	3.450	3.139	3.070	3.239	3.257	3.225	3.508	3.863	
KIDNEY	.870	.840	.870	.772	.884	.883	.780	.806	.872	1.053	
HEART	.327	.314	.320	.296	.318	.322	.351	.296	.317	.392	
SPLEEN	.268	.238	.208	.189	.202	.230	.253	.214	.209	.258	
TESTES	1.059	1.085	1.039	.963	1.034	1.054	1.001	.939	1.015	1.239	

A STRING OF ***** INDICATES NO DATA

TABLE 18-IV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP		IV									
TNT (MG/KG/DAY)		25									
RDX (MG/KG/DAY)		-									
TEST ANIMAL											
NUMBER	51	52	53	54	55	56	57	58	59	60	
TERMINAL BODY WEIGHT (G)	271.0	265.0	263.0	290.0	276.0	271.0	294.0	220.0	302.0	303.0	
BRAIN	.683	.720	.702	.664	.654	.660	.566	.820	.605	.615	
LIVER	3.747	3.155	3.507	3.829	3.125	3.899	3.476	3.585	3.203	3.463	
KIDNEY	.918	.840	.930	.926	.755	.921	.859	.957	.870	.899	
HEART	.326	.335	.321	.317	.377	.340	.314	.352	.303	.310	
SPLEEN	.238	.243	.232	.205	.271	.302	.252	.260	.213	.220	
TESTES	1.111	1.102	1.105	.993	1.141	1.107	1.028	1.215	1.006	1.018	

A STRING OF ***** INDICATES NO DATA

TABLE 18-V
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	61	62	63	64	65	66	67	68	69	70
TERMINAL BODY WEIGHT (G)	259.0	257.0	252.0	231.0	212.0	259.0	265.0	288.0	249.0	235.0
BRAIN	.703	.716	.763	.804	.854	.694	.663	.723	.746	.807
LIVER	3.892	4.267	4.204	4.319	4.092	4.399	4.243	4.643	4.435	4.005
KIDNEY	.942	.980	.905	.882	.921	.968	.851	1.003	.984	.831
HEART	.318	.315	.311	.357	.356	.334	.323	.344	.376	.298
SPLEEN	.295	.331	.356	.512	.405	.302	.336	.361	.395	.386
TESTES	.937	1.105	.982	.797	1.107	.935	.926	1.073	1.124	1.032

A STRING OF ***** INDICATES NO DATA

TABLE 18-VI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF
TROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT
MIXTURES IN THE FISCHER RAT
RELATIVE ORGAN WEIGHTS FOR LES (% BODY WEIGHT)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	71	72	73	74	75	76	77	78	79	80
TERMINAL BODY WEIGHT (G)	224.0	156.0	188.0	221.0	210.0	215.0	227.0	*****	227.0	242.0
BRAIN	.825	1.077	.955	.833	.831	.782	.794	*****	.760	.803
LIVER	5.469	5.207	5.206	4.742	5.669	5.270	5.078	*****	5.383	5.219
KIDNEY	.979	1.150	1.004	.917	1.043	.971	1.056	*****	.904	.982
HEART	.363	.412	.337	.353	.358	.401	.340	*****	.372	.368
SPLEEN	1.037	.897	.906	.987	1.232	1.116	.930	*****	1.056	.930
TESTES	.427	.541	.496	.306	.476	.391	.323	*****	.372	.450

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO. 1

TABLE 18-VII

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX), AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP		V						
TNT (MG/KG/DAY)		-						
RDX (MG/KG/DAY)		10						
TEST ANIMAL								
NUMBER	81	82	83	84	85	86	87	88
TERMINAL BODY WEIGHT (G)	257.0	297.0	255.0	252.0	322.0	275.0	290.0	299.0
BRAIN	.689	.587	.755	.710	.636	.719	.650	.665
LIVER	3.386	3.501	2.987	3.510	3.590	3.298	3.016	3.276
KIDNEY	.979	.896	.818	.971	.501	.803	.921	.887
HEART	.350	.356	.390	.375	.330	.348	.328	.325
SPLEEN	.223	.241	.251	.222	.207	.247	.222	.217
TESTES	1.121	1.081	1.029	1.156	1.023	1.069	1.058	.996
								1.077
								1.057

A STRING OF ***** INDICATES NO DATA

TABLE 18-VIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

		VIII									
		30									
TREATMENT GROUP	TEST ANIMAL	91	92	93	94	95	96	97	98	99	100
TNT (MG/KG/DAY)	NUMBER										
RDX (MG/KG/DAY)											
TERMINAL BODY WEIGHT (G)											
BRAIN	.695		.669	.746	.656	.695	.702	.735	.677	.676	.772
LIVER	3.826		3.203	3.607	3.555	3.020	2.916	3.330	3.213	3.268	3.197
KIDNEY	.872		.807	1.041	.847	.916	.797	.804	.872	.926	.948
HEART	.345		.321	.355	.353	.319	.297	.323	.317	.333	.353
SPLEEN	.211		.193	.233	.260	.311	.236	.239	.199	.240	.234
TESTES	1.088		1.036	1.252	1.112	1.060	1.010	1.079	.973	1.071	1.128

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 18-IX
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP		IX							
TNT (MG/KG/DAY)		-							
RDX (MG/KG/DAY)		100							
TEST ANIMAL									
NUMBER	101	102	103	104	105	106	107	108	109
TERMINAL BODY WEIGHT (G)	*****	*****	*****	244.0	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	.755	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	3.816	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	.920	*****	*****	*****	*****	*****
HEART	*****	*****	*****	.385	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	.218	*****	*****	*****	*****	*****
TESTES	*****	*****	*****	1.206	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

1.245

.207

.321

.892

3.672

.740

229.0

110

TABLE 18-X
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP		X - 300									
TNT (MG/KG/DAY)											
RDX (MG/KG/DAY)											
TEST ANIMAL	NUMBER	111	112	113	114	115	116	117	118	119	120
TERMINAL BODY WEIGHT (G)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TESTES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

I6116/L6121, STUDY NO.1

TABLE 18-XI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP		XI									
TNT (MG/KG/DAY)		-									
RDX (MG/KG/DAY)		600									
TEST ANIMAL	NUMBER	121	122	123	124	125	126	127	128	129	130
TERMINAL BODY WEIGHT (G)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TESTES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 18-XII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP		XII									
TNT (MG/KG/DAY)		5									
RDX (MG/KG/DAY)		30									
TEST ANIMAL	NUMBER	131	132	133	134	135	136	137	138	139	140
TERMINAL BODY WEIGHT (G)		248.0	220.0	288.0	252.0	260.0	250.0	175.0	254.0	269.0	220.0
BRAIN	.670	.777	.627	.794	.794	.664	.682	.927	.702	.762	.782
LIVER	3.786	3.554	3.471	3.496	3.496	3.154	3.459	3.456	3.530	2.990	3.900
KIDNEY	.875	.367	.891	.960	.960	.889	.864	1.019	.870	.835	.959
HEART	.331	.941	.317	.348	.348	.318	.337	.397	.339	.334	.363
SPLEEN	.214	.322	.286	.382	.382	.217	.223	.263	.255	.275	.224
TESTES	1.111	1.229	1.095	1.106	1.106	1.048	1.195	1.552	1.051	1.055	1.236

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 18-XIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP		XIII									
TNT (MG/KG/DAY)		5									
RDX (MG/KG/DAY)		300									
TEST ANIMAL	NUMBER	141	142	143	144	145	146	147	148	149	150
TERMINAL BODY WEIGHT	(G)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TESTES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 18-XIV

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	151	152	153	154	155	156	157	158	159	160
TERMINAL BODY WEIGHT (G)	210.0	233.0	232.0	212.0	212.0	212.0	243.0	203.0	238.0	196.0
BRAIN	.862	.785	.770	.832	.871	.798	.744	.909	.782	.935
LIVER	4.810	5.014	4.228	4.439	4.217	4.666	4.503	4.422	4.776	6.109
KIDNEY	.941	.995	1.080	.908	1.024	.887	1.017	1.086	.959	1.224
HEART	.348	.358	.359	.345	.403	.374	.336	.390	.383	.425
SPLEEN	.290	.330	.342	.368	.387	.511	.437	.385	.317	.426
TESTES	1.373	1.299	1.313	1.310	1.434	1.304	1.264	1.388	1.238	1.609

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 18-XV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP		XV									
TNT (MG/KG/DAY)		125									
RDX (MG/KG/DAY)		100									
TEST ANIMAL	NUMBER	161	162	163	164	165	166	167	168	169	170
TERMINAL BODY WEIGHT (G)		203.0	*****	242.0	224.0	203.0	*****	211.0	210.0	221.0	174.0
BRAIN	.923	*****	*****	.718	.832	.923	*****	.854	.919	.886	1.068
LIVER	5.029	*****	*****	4.133	4.610	5.349	*****	4.820	4.965	5.200	4.709
KIDNEY	.973	*****	*****	.800	1.058	1.132	*****	1.024	.977	.955	.987
HEART	.358	*****	*****	.305	.347	.355	*****	.368	.394	.348	.407
SPLEEN	362	*****	*****	.210	.344	.305	*****	.309	.361	.299	.243
TESTES	1.361	*****	*****	1.222	1.336	1.325	*****	1.351	1.397	1.268	1.523

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 18-XVI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR MALES (% BODY WEIGHT)

TREATMENT GROUP		XVI									
TNT (MG/KG/DAY)		125									
RDX (MG/KG/DAY)		303									
TEST ANIMAL	NUMBER	171	172	173	174	175	176	177	178	179	180
TERMINAL BODY WEIGHT (G)		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TESTES		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 19-I
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT,
MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALE (G)

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	I =													
	181	182	183	184	185	186	187	188	189	190	191	192	193	194
TERMINAL BODY WEIGHT 149.0	159.0	175.0	173.0	176.0	157.0	184.0	154.0	170.0	155.0	146.0	154.0	171.0	159.0	152.0
BRAIN 1.624	1.713	1.913	1.811	1.822	1.643	1.841	1.521	1.642	1.780	1.661	1.688	1.733	1.844	1.669
LIVER 5.147	4.516	5.510	5.270	5.167	5.682	5.339	4.435	5.611	4.590	5.408	4.993	5.683	4.659	4.632
KIDNEY 1.389	1.354	1.655	1.525	1.526	1.469	1.633	1.308	1.447	1.334	1.405	1.272	1.580	1.500	1.381
HEART .554	.544	.636	.642	.688	.571	.611	.530	.586	.558	.521	.589	.593	.547	.548
SPLEEN .357	.398	.409	.451	.387	.411	.494	.403	.402	.447	.272	.393	.388	.300	.401
OVARIES .055	.073	.087	.095	.060	.065	.079	.060	.076	.049	.092	.101	*****	.078	.067

A STRING OF ***** INDICATES NO DATA

161116/16121, STUDY NO.1

TABLE 19-I (CON'T)
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	I -													
	197	198	199	200	201	202	203	204	205	206	207	208	209	210
TERMINAL BODY WEIGHT 181.0	147.0	170.0	167.0	162.0	143.0	157.0	185.0	171.0	150.0	160.0	169.0	174.0	176.0	172.0
BRAIN 1.540	1.622	1.656	1.884	1.688	1.758	1.725	1.879	1.703	1.569	1.702	1.795	1.838	1.732	1.971
LIVER 5.295	4.709	5.778	4.527	4.680	4.850	4.432	5.138	5.131	4.945	4.880	5.005	5.175	5.210	4.988
KIDNEY 1.484	1.350	1.473	1.395	1.433	1.392	1.347	1.475	1.533	1.351	1.349	1.643	1.482	1.600	1.592
HEART .593	.576	.661	.568	.595	.578	.573	.670	.564	.601	.563	.628	.636	.650	.620
SPLEEN .558	.409	.440	.425	.471	.351	.399	.377	.397	.399	.422	.356	.487	.461	.408
OVARIES .066	.051	.073	.063	.080	.055	.065	.067	.068	.075	.051	.089	.087	.086	.089

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 19-II
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

II

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TREATMENT GROUP
TNT (MG/KG/DAY)
RDX (MG/KG/DAY)
TEST ANIMAL

NUMBER	211	212	213	214	215	216	217	218	219	220
TERMINAL BODY WEIGHT	147.0	164.0	155.0	158.0	170.0	173.0	162.0	158.0	167.0	157.0
BRAIN	1.631	1.859	1.691	1.696	1.615	1.743	1.708	1.729	1.865	1.763
LIVER	4.275	4.796	4.773	4.566	5.367	5.389	4.781	4.621	5.344	4.627
KIDNEY	1.306	1.492	1.332	1.400	1.510	1.507	1.452	1.425	1.680	1.441
HEART	.551	.589	.635	.565	.606	.620	.604	.546	.640	.566
SPLEEN	.405	.387	.377	.397	.466	.405	.458	.535	.364	.387
OVARIES	.056	.062	.059	.061	.073	.072	.060	.071	.067	.063

A STRING OF ***** INDICATES NO DATA

TABLE 19-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP		III									
TNT (MG/KG/DAY)		5									
RDX (MG/KG/DAY)		-									
TEST ANIMAL											
NUMBER	221	222	223	224	225	226	227	228	229	230	231
TERMINAL BODY WEIGHT	182.0	162.0	170.0	180.0	159.0	181.0	144.0	162.0	174.0	118.0	
BRAIN	1.800	1.732	1.815	1.914	1.575	1.891	1.615	1.733	1.761	1.780	
LIVER	5.081	4.363	4.929	5.628	4.800	5.776	4.770	4.646	5.249	3.411	
KIDNEY	1.625	1.369	1.695	1.601	1.453	1.709	1.101	1.332	1.621	1.290	
HEART	.612	.561	.631	.663	.592	.646	.592	.594	.633	.515	
SPLEEN	.512	.398	.430	.422	.452	.396	.426	.364	.672	.281	
OVARIES	.070	.068	.091	.057	.073	.078	.080	.082	.061	.078	

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 19-IV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	231	232	233	234	235	236	237	238	239	240
TERMINAL BODY WEIGHT	173.0	179.0	168.0	160.0	162.0	156.0	152.0	158.0	159.0	172.0
BRAIN	1.767	1.693	1.744	1.733	1.585	1.709	1.644	1.520	1.663	1.826
LIVER	5.687	5.420	5.487	4.920	5.930	5.119	5.390	4.860	6.400	4.936
KIDNEY	1.501	1.654	1.641	1.495	1.491	1.521	1.560	1.489	1.534	1.502
HEART	.582	.603	.568	.603	.596	.524	.572	.591	.582	.587
SPLEEN	.487	.456	.461	.399	.474	.440	.461	.592	.375	.433
OVARIES	.079	.070	.066	.060	.081	.048	.061	.085	.085	.057

A STRING OF ***** INDICATES NO DATA

TABLE 19-V

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 2,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP		V								
TNT (MG/KG/DAY)		125								
RDX (MG/KG/DAY)										
TEST ANIMAL										
NUMBER	241	242	243	244	245	246	247	248	249	250
TERMINAL BODY WEIGHT	135.0	153.0	149.0	140.0	153.0	136.0	149.0	130.0	144.0	148.0
BRAIN	1.343	1.676	1.712	1.807	1.800	1.773	1.740	1.430	1.850	1.759
LIVER	4.845	5.867	5.949	5.495	6.009	5.335	5.678	5.435	5.831	6.351
KIDNEY	1.413	1.399	1.493	1.391	1.492	1.401	1.481	1.399	1.556	1.491
HEART	.482	.546	.577	.591	.559	.551	.590	.523	.618	.556
SPLEEN	.567	.779	.578	.489	.693	.447	.705	.494	1.129	.511
OVARIES	.062	.059	.059	.044	.077	.075	.065	.056	.049	.078

A STRING OF ***** INDICATES NO DATA

TABLE 19-VI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	251	252	253	254	255	256	257	258	259	260
TERMINAL BODY WEIGHT	135.0	134.0	136.0	144.0	128.0	*****	140.0	127.0	136.0	146.0
BRAIN	1.565	1.628	1.694	1.774	1.635	*****	1.741	1.488	1.728	1.654
LIVER	5.680	6.471	6.480	7.079	7.144	*****	6.907	6.299	6.580	7.219
KIDNEY	1.292	1.460	1.281	1.429	1.371	*****	1.518	1.385	1.373	1.416
HEART	.522	.556	.493	.577	.470	*****	.571	.517	.544	.645
SPLEEN	1.309	1.356	1.540	1.744	1.382	*****	1.300	1.333	1.153	2.215
OVARIES	.038	.061	.062	.041	.077	*****	.042	.050	.055	.056

A STRING OF ***** INDICATES NO DATA

TABLE 19-VII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

VII
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10

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	261	262	263	264	265	266	267	268	269	270
TERMINAL BODY WEIGHT	153.0	167.0	151.0	171.0	*****	166.0	158.0	160.0	164.0	167.0
BRAIN	1.618	1.687	1.795	1.665	*****	1.535	1.746	1.781	1.788	1.853
LIVER	4.990	5.422	4.870	5.885	*****	5.509	4.577	4.860	5.085	5.046
KIDNEY	1.487	1.433	1.494	1.519	*****	1.490	1.451	1.433	1.405	1.618
HEART	.558	.590	.541	.615	*****	.556	.584	.597	.538	.583
SPLEEN	.377	.445	.406	.464	*****	.465	.436	.357	.394	.399
OVARIES	.081	.073	.048	.077	*****	.061	.063	.097	.064	.073

A STRING OF ***** INDICATES NO DATA

TABLE 19-VIII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	VIII 30									
	271	272	273	274	275	276	277	278	279	280
TERMINAL BODY WEIGHT	168.8	162.0	158.0	160.0	154.0	177.0	148.0	172.0	163.0	153.0
BRAIN	1.791	1.878	1.697	1.809	1.663	1.666	1.805	1.871	1.720	1.542
LIVER	5.441	5.022	5.377	5.270	4.755	5.243	4.454	5.554	5.823	5.471
KIDNEY	1.537	1.422	1.587	1.422	1.394	1.556	1.417	1.574	1.626	1.479
HEART	.584	.564	.603	.552	.512	.622	.540	.641	.627	.618
SPLEEN	.459	.471	.417	.429	.559	.484	.392	.467	.411	.472
OVARIES	.091	.082	.063	.056	.068	.067	.066	.066	.058	.074

A STRING OF ***** INDICATES NO DATA

TABLE 19-IX
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	281	282	283	284	285	286	287	288	289	290
TERMINAL BODY WEIGHT	171.8	164.8	158.8	*****	*****	157.8	*****	*****	*****	147.8
BRAIN	1.767	1.813	1.773	*****	*****	1.772	*****	*****	*****	1.738
LIVER	6.121	6.139	5.509	*****	*****	5.942	*****	*****	*****	5.671
KIDNEY	1.553	1.477	1.453	*****	*****	1.419	*****	*****	*****	1.351
HEART	.686	.616	.539	*****	*****	.557	*****	*****	*****	.501
SPLEEN	.533	.391	.377	*****	*****	.368	*****	*****	*****	.402
OVARIES	.878	.862	.866	*****	*****	.849	*****	*****	*****	.841

A STRING OF ***** INDICATES NO DATA

TABLE 19-X
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP		X								
TNT (MG/KG/DAY)		-								
RDX (MG/KG/DAY)		300								
TEST ANIMAL										
NUMBER	291	292	293	294	295	296	297	298	299	300
TERMINAL BODY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
WEIGHT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
OVARIES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 19-XI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP		XI									
TNT (MG/KG/DAY)		-									
RDX (MG/KG/DAY)		600									
TEST ANIMAL	NUMBER	301	302	303	304	305	306	307	308	309	310
TERMINAL BODY	WEIGHT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
OVARIES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 19-XII
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROCHLORUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP		XII									
TNT (MG/KG/DAY)		5									
RDX (MG/KG/DAY)		30									
TEST ANIMAL	NUMBER	311	312	313	314	315	316	317	318	319	320
TERMINAL BODY WEIGHT	151.8	158.8	166.8	134.8	141.8	168.8	168.8	168.8	152.8	167.8	181.8
BRAIN	1.847	1.886	1.711	1.656	1.586	1.878	1.878	1.798	1.631	1.857	1.682
LIVER	5.141	4.847	5.967	4.389	4.875	6.484	6.484	6.838	4.864	5.628	5.721
KIDNEY	1.448	1.496	1.513	1.488	1.528	1.588	1.588	1.658	1.478	1.593	1.649
HEART	.493	.554	.563	.494	.561	.618	.618	.613	.529	.562	.599
SPLZEM	.411	.425	.589	.481	.488	.376	.376	.383	.339	.399	.452
OVARIES	.863	.865	.866	.854	.886	.867	.867	.895	.844	.878	.887

A STRING OF ***** INDICATES NO DATA

TABLE 19-XIII
 THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP		XIII									
TNT (MG/KG/DAY)		5									
RDX (MG/KG/DAY)		300									
TEST ANIMAL	NUMBER	321	322	323	324	325	326	327	328	329	330
TERMINAL BODY	WEIGHT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
OVARIES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

L61116/L6121, STUDY NO.1

TABLE 19-XIV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL	NUMBER	XIV											
		331	332	333	334	335	336	337	338	339	340		
TERMINAL BODY WEIGHT	126.0	144.0	150.0	139.0	127.0	140.0	140.0	126.0	130.0	146.0	131.0		
BRAIN	1.537	1.763	1.687	1.733	1.649	1.771	1.771	1.575	1.671	1.684	1.746		
LIVER	5.523	6.009	5.865	6.257	5.070	5.854	5.854	5.472	5.327	5.601	5.820		
KIDNEY	1.428	1.455	1.472	1.544	1.439	1.604	1.604	1.339	1.396	1.361	1.421		
HEART	.534	.555	.523	.534	.521	.543	.543	.544	.528	.516	.548		
SPLEEN	.432	.468	.576	.476	.424	.492	.492	.419	.515	.620	.513		
OVARIES	.063	.053	.041	.084	.046	.054	.054	.073	.060	.073	.059		

A STRING OF ***** INDICATES NO DATA

TABLE 19-XV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	341	342	343	344	345	346	347	348	349	350
TERMINAL BODY WEIGHT	114.8	145.8	142.8	*****	150.8	157.8	*****	131.8	138.8	146.8
BRAIN	1.622	1.783	1.783	*****	1.857	1.701	*****	1.619	1.652	1.885
LIVER	4.737	6.851	6.198	*****	6.222	7.272	*****	6.269	6.166	6.794
KIDNEY	1.386	1.561	1.548	*****	1.474	1.547	*****	1.368	1.344	1.597
HEART	.468	.584	.553	*****	.595	.609	*****	.535	.518	.546
SPLEEN	.388	.528	.547	*****	.621	.642	*****	.518	.504	.526
OVARIES	.848	.861	.873	*****	.866	.892	*****	.863	.852	.856

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 19-XVI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

ORGAN WEIGHTS FOR FEMALES (G)

TREATMENT GROUP		XVI						
TNT (MG/KG/DAY)		125						
RDX (MG/KG/DAY)		300						
TEST ANIMAL	NUMBER	351	352	353	354	355	356	357
TERMINAL BODY WEIGHT		*****	*****	*****	*****	*****	*****	*****
BRAIN		*****	*****	*****	*****	*****	*****	*****
LIVER		*****	*****	*****	*****	*****	*****	*****
KIDNEY		*****	*****	*****	*****	*****	*****	*****
HEART		*****	*****	*****	*****	*****	*****	*****
SPLEEN		*****	*****	*****	*****	*****	*****	*****
OVARIES		*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 20-I
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX), AND TNT/RDX MIXTURES IN THE FISCHER RAT
RELATIVE ORGAN WEIGHTS FOR FEMALES (* BODY WEIGHT)

TREATMENT GROUP CONTROL GROUP TEST ANIMAL NUMBER	I													
	181	182	183	184	185	186	187	188	189	190	191	192	193	194
TERMINAL BODY WEIGHT (G)	149.8	159.8	175.8	173.8	176.8	157.8	184.8	154.8	178.8	155.8	146.8	154.8	171.8	159.8
BRAIN	1.898	1.877	1.893	1.847	1.835	1.846	1.881	.988	.966	1.143	1.138	1.896	1.813	1.168
LIVER	3.454	2.848	3.149	3.846	2.936	3.619	2.982	2.888	3.381	2.961	3.784	3.242	3.323	2.938
KIDNEY	.932	.852	.946	.882	.867	.936	.888	.849	.851	.861	.962	.826	.924	.943
HEART	.372	.342	.363	.371	.391	.364	.332	.344	.345	.368	.357	.382	.347	.344
SPLEEN	.248	.258	.234	.261	.228	.262	.268	.262	.236	.288	.186	.255	.227	.245
OVARIES	.837	.846	.858	.855	.834	.841	.843	.839	.845	.832	.863	.866	*****	.849

A STRING OF ***** INDICATES NO DATA

TABLE 20-1(CON'T)
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

TREATMENT GROUP
CONTROL GROUP
TEST ANIMAL
NUMBER

196	197	198	199	200	201	202	203	204	205	206	207	208	209	210
181.0	147.0	170.0	167.0	162.0	143.0	157.0	185.0	171.0	150.0	160.0	169.0	174.0	176.0	172.0
TERMINAL BODY WEIGHT (G)														
BRAIN .851	1.103	.974	1.128	1.042	1.229	1.099	1.016	.996	1.046	1.064	1.062	1.056	.984	1.146
LIVER 2.925	3.203	3.399	2.711	2.891	3.392	2.823	2.777	3.001	3.297	3.050	2.962	2.974	2.960	2.900
KIDNEY .820	.918	.866	.835	.885	.973	.858	.797	.896	.901	.843	.972	.852	.909	.926
HEART .328	.392	.389	.340	.367	.404	.365	.362	.330	.401	.352	.372	.366	.369	.360
SPLEEN .308	.278	.259	.254	.291	.245	.254	.204	.232	.266	.264	.234	.280	.262	.237
OVARIES .036	.035	.043	.038	.049	.038	.041	.036	.040	.050	.032	.053	.050	.049	.052

A STRING OF ***** INDICATES NO DATA

TABLE 20-II
THIRTEEN WEEK ORAL (PIT) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT
RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	211	212	213	214	215	216	217	218	219	220
TERMINAL BODY WEIGHT (G)	147.0	164.0	155.0	158.0	170.0	173.0	162.0	158.0	167.0	157.0
BRAIN	1.110	1.134	1.091	1.073	.950	1.008	1.054	1.094	1.117	1.123
LIVER	2.909	2.924	3.079	2.090	3.157	3.115	2.951	2.925	3.200	2.947
KIDNEY	.888	.910	.859	.886	.888	.871	.890	.902	1.006	.918
HEART	.375	.359	.410	.358	.356	.358	.373	.346	.383	.361
SPLEEN	.276	.236	.243	.251	.274	.234	.283	.339	.218	.246
OVARIES	.038	.038	.038	.039	.043	.042	.037	.045	.040	.040

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 20-III
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (* BODY WEIGHT)

TREATMENT GROUP		III									
TNT (MG/KG/DAY)		5									
RDX (MG/KG/DAY)		-									
TEST ANIMAL											
NUMBER	221	222	223	224	225	226	227	228	229	230	
TERMINAL BODY WEIGHT (G)	182.8	162.8	178.8	188.8	159.8	181.8	144.8	162.8	174.8	118.8	
BRAIN	.989	1.069	1.068	1.063	.991	1.045	1.122	1.070	1.012	1.508	
LIVER	2.702	2.693	2.899	3.127	3.019	3.191	3.313	2.868	3.017	2.891	
KIDNEY	.893	.645	.997	.889	.914	.944	.973	.822	.932	1.093	
HEART	.348	.346	.371	.368	.372	.357	.411	.367	.364	.436	
SPLEEN	.281	.246	.253	.234	.284	.219	.296	.225	.386	.238	
OVARIES	.038	.042	.054	.032	.046	.043	.056	.051	.035	.066	

A STRING OF ***** INDICATES NO DATA

TABLE 20-IV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

TREATMENT GROUP TNT (MG/YG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	231	232	233	234	235	236	237	238	239	240
TERMINAL BODY WEIGHT (G)	173.0	179.0	168.0	160.0	162.0	156.0	152.4	158.0	159.0	172.0
BRAIN	1.221	.946	1.038	1.083	.978	1.096	1.082	.967	1.046	1.062
LIVER	3.287	3.028	3.266	3.075	3.660	3.281	3.546	3.076	4.025	2.870
KIDNEY	.868	.924	.977	.934	.920	.975	1.026	.942	.996	.873
HEART	.336	.337	.338	.377	.368	.336	.376	.374	.366	.341
SPLEEN	.282	.255	.274	.244	.293	.282	.303	.375	.236	.252
OVARIES	.046	.039	.039	.037	.050	.031	.040	.054	.053	.033

IV
25
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A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 20-V
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

		RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)									
		V									
		125									
TREATMENT GROUP	TEST ANIMAL	242	243	244	245	246	247	248	249	250	
TNT (MG/KG/DAY)	NUMBER	241									
RDX (MG/KG/DAY)	TERMINAL BODY WEIGHT (G)	135.0									
BRAIN		.995	1.149	1.291	1.176	1.304	1.168	1.100	1.285	1.189	
LIVER		3.589	3.993	3.925	3.927	3.923	3.811	4.181	4.049	4.291	
KIDNEY		1.047	1.002	.994	.975	1.030	.994	1.076	1.031	1.007	
HEART		.357	.387	.422	.365	.405	.396	.402	.429	.376	
SPLEEN		.423	.388	.349	.453	.329	.473	.300	.784	.345	
OVARIES		.046	.040	.031	.050	.055	.044	.043	.034	.053	

A STRING OF ***** INDICATES NO DATA

TABLE 20-VI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	251	VI							
		300							
TERMINAL BODY WEIGHT (G)	252	253	254	255	256	257	258	259	260
134.0	136.0	144.0	128.0	*****	140.0	127.0	136.0	146.0	
BRAIN	1.215	1.246	1.232	1.277	*****	1.244	1.172	1.271	1.133
LIVER	4.829	4.765	4.916	5.581	*****	4.934	4.960	4.838	4.945
KIDNEY	.957	.942	.992	1.071	*****	1.084	1.091	1.010	.970
HEART	.387	.363	.401	.367	*****	.408	.407	.400	.442
SPLEEN	.970	1.132	1.211	1.080	*****	.929	1.050	.848	1.517
OVARIES	.028	.046	.028	.060	*****	.030	.039	.040	.039

A STRING OF ***** INDICATES NO DATA

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT), HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

TREATMENT GROUP		VIII - 30									
TNT (MG/KG/DAY)		272	273	274	275	276	277	278	279	280	
RDX (MG/KG/DAY)	TEST ANIMAL										
	NUMBER	271									
TERMINAL BODY WEIGHT (G)	168.0	162.0	158.0	160.0	154.0	177.0	148.0	172.0	163.0	153.0	
BRAIN	1.066	1.159	1.074	1.131	1.080	.941	1.220	1.088	1.055	1.008	
LIVER	3.239	3.100	3.403	3.294	3.088	2.962	3.009	3.229	3.572	3.576	
KIDNEY	.915	.915	1.004	.889	.905	.879	.957	.915	.998	.967	
HEART	.348	.348	.382	.345	.332	.351	.365	.373	.385	.404	
SPLEEN	.273	.291	.264	.268	.363	.273	.265	.272	.252	.308	
OVARIES	.054	.051	.040	.035	.044	.038	.045	.038	.036	.048	

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 20-IX

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)											
		IX - 100									
TREATMENT GROUP	TEST ANIMAL	281	282	283	284	285	286	287	288	289	290
TNT (MG/KG/DAY)	NUMBER										
RDX (MG/KG/DAY)											
TERMINAL BODY WEIGHT (G)		171.0	164.0	158.0	*****	*****	157.0	*****	*****	*****	147.0
BRAIN	1.033	1.105	1.122	1.122	*****	*****	1.129	*****	*****	*****	1.182
LIVER	3.580	3.743	3.487	3.487	*****	*****	3.785	*****	*****	*****	3.858
KIDNEY	.908	.901	.920	.920	*****	*****	.904	*****	*****	*****	.919
HEART	.354	.376	.341	.341	*****	*****	.355	*****	*****	*****	.341
SPLEEN	.312	.238	.239	.239	*****	*****	.234	*****	*****	*****	.273
OVARIES	.046	.038	.042	.042	*****	*****	.031	*****	*****	*****	.028

A STRING OF ***** INDICATES NO DATA

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

[illegible]

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 20-XI

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

TREATMENT GROUP		XI									
TNT (MG/KG/DAY)		-									
RDX (MG/KG/DAY)		600									
TEST ANIMAL	NUMBER	301	302	303	304	305	306	307	308	309	310
TERMINAL BODY WEIGHT (G)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
OVARIES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 20-XII

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

XII
 5
 30

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	311	312	313	314	315	316	317	318	319	320
TERMINAL BODY WEIGHT (G)	151.0	158.0	166.0	134.0	141.0	168.0	160.0	152.0	167.0	181.0
BRAIN	1.223	1.194	1.031	1.236	1.125	1.113	1.119	1.073	1.112	.885
LIVER	3.405	3.068	3.595	3.216	3.457	3.860	3.769	3.200	3.365	3.161
KIDNEY	.954	.947	.911	1.051	1.084	.940	1.031	.972	.954	.911
HEART	.326	.351	.339	.369	.398	.363	.383	.342	.337	.331
SPLEEN	.272	.269	.307	.355	.289	.224	.239	.223	.239	.250
OVARIES	.042	.041	.040	.040	.061	.040	.059	.029	.047	.048

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 20-XIII

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

TREATMENT GROUP		XIII									
TNT (MG/KG/DAY)		5									
RDX (MG/KG/DAY)		300									
TEST ANIMAL											
NUMBER	321	322	323	324	325	326	327	328	329	330	
TERMINAL BODY WEIGHT (G)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
OVARIES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

TABLE 20-XIV

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TAINITROTOLUENE (TNT),
 HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	331	XIV 125 30									
		332	333	334	335	336	337	338	339	340	
TERMINAL BODY WEIGHT (G)	126.0	144.0	150.0	139.0	127.0	140.0	126.0	130.0	146.0	131.0	
BRAIN	1.220	1.224	1.125	1.247	1.298	1.265	1.250	1.285	1.153	1.333	
LIVER	4.383	4.173	3.910	4.501	3.992	4.181	4.343	4.098	3.836	4.443	
KIDNEY	1.133	1.010	.981	1.111	1.133	1.146	1.063	1.074	.932	1.085	
HEART	.424	.392	.349	.384	.410	.388	.432	.406	.353	.418	
SPLEEN	.343	.325	.384	.342	.334	.351	.333	.396	.425	.392	
OVARIES	.050	.037	.027	.060	.036	.039	.058	.046	.050	.045	

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 20-XV
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

TREATMENT GROUP TNT (MG/KG/DAY) RDX (MG/KG/DAY) TEST ANIMAL NUMBER	341	342	343	344	345	346	347	348	349	350
TERMINAL BODY WEIGHT (G)	114.0	145.0	142.0	*****	150.0	157.0	*****	131.0	138.0	146.0
BRAIN	1.423	1.230	1.256	*****	1.238	1.083	*****	1.236	1.197	1.291
LIVER	4.155	4.725	4.365	*****	4.148	4.632	*****	4.785	4.468	4.653
KIDNEY	1.146	1.077	1.085	*****	.983	.985	*****	1.038	.974	1.094
HEART	.411	.403	.389	*****	.397	.388	*****	.408	.375	.374
SPLEEN	.333	.359	.385	*****	.414	.409	*****	.395	.365	.360
OVARIES	.042	.042	.051	*****	.044	.059	*****	.048	.038	.038

A STRING OF ***** INDICATES NO DATA

L6116/L6121, STUDY NO.1

TABLE 20-XVI
THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE (TNT),
HEXAHYDRO-1,3,5-TRIAZINE (RDX) AND TNT/RDX MIXTURES IN THE FISCHER RAT

RELATIVE ORGAN WEIGHTS FOR FEMALES (% BODY WEIGHT)

XVI
125
300

TREATMENT GROUP	351	352	353	354	355	356	357	358	359	360
TNT (MG/KG/DAY)										
RDX (MG/KG/DAY)										
TEST ANIMAL										
NUMBER	351	352	353	354	355	356	357	358	359	360
TERMINAL BODY WEIGHT (G)	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
BRAIN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
LIVER	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
KIDNEY	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HEART	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
SPLEEN	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
OVARIES	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

A STRING OF ***** INDICATES NO DATA

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APPENDIX VII
MERCURY CONTENT OF 5002

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MERCURY CONTENT OF 5002 CERTIFIED RODENT CHOW (PPM)¹

<u>Laboratory</u>	<u>Spiked Sample</u>	<u>Unspiked Sample</u>
Diversified Laboratories	3.45	0.19
Laboratory X ²	4.13	0.18
Laboratory Y ²	1.5	< 0.05
Raltech	2.29	< 0.05
	2.47	< 0.05
Trace Elements, Inc.	1.4	0.006
	1.4	0.006

1 - Duplicates given where possible.

2 - Two unidentified laboratories selected by Diversified checked results of spiked and unspiked samples.

APPENDIX VIII

NITRATE/NITRITE CONTENT OF 5002

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NITRATE AND NITRITE CONTENT OF
CERTIFIED RODENT CHOW 5002 (PPM) *

<u>Rodent Feed Lot No.</u>	<u>Analytical Results</u>
9/07/79 B Meal ^a	
Nitrates	4.8
Nitrites	< 0.1
11/15/79 N Meal ^b	
Nitrates	2.4
Nitrites	< 0.1
12/27/79 C Meal ^c	
Nitrates	8.0
Nitrites	0.22
1/16/79 J Meal ^d	
Nitrates	1.0
Nitrites	< 0.1

* Analyses were performed by Diversified Laboratories, Inc.; Fairfax, VA

Date Of Actual Analysis:

- a. February 22, 1980
- b. February 22, 1980
- c. April 23, 1980
- d. April 23, 1980

APPENDIX IX
CHICAGO WATER CHEMICAL ANALYSIS

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CITY OF CHICAGO				DEPARTMENT OF WATER				BUREAU OF WATER OPERATIONS			
WATER PURIFICATION DIVISION				WATER PURIFICATION LABORATORY				LABORATORY			
SAMPLES COLLECTED Feb. 6 1980				COMPREHENSIVE CHEMICAL ANALYSIS				ANALYSIS COMPLETED March 18 1980			
PARAMETER	IPCB MCL 1979	DETERMINED AS	STORET NUMBER	RAW CRIB	COMPOSITE SAMPLES OUTLET DISTRIBUTION	RAW CRIB	OUTLET	COMPOSITE SAMPLES CENTRAL AND NORTH WATER DISTRICTS	OUTLET	COMPOSITE SAMPLES CENTRAL AND NORTH WATER DISTRICTS	NOR. DIST.
TEMPERATURE		°C	00010	2	2	2	2	2	2	2	4
TURBIDITY	1	NTU	00076	3.0	0.25	0.25	0.50	0.10	0.10	0.15	0.15
THRESHOLD ODOR, STRAIGHT	3	TON	00086	1M	1M	1M	1M	1M	1M	1M	1M
THRESHOLD ODOR, DECHLORINATED	3	TON									
COLOR	15	PCU-UNIT/LS	00080	2	0	0	1	0	0	0	0
PH	6.5-8.5	STD UNITS	01400	8.3	8.2	8.2	8.3	8.3	8.3	8.3	8.3
ALKALINITY, PHTM		CaCO ₃	00415	0	0	0	0	0	0	0	0
ALKALINITY, TOTAL		CaCO ₃	00410	118	118	118	119	117	117	116	116
SULFATE	250	SO ₄	00945	25.0	25.0	25.5	24.5	25.0	25.0	27.0	27.0
CHLORIDE	250	CL	00940	11.5	10.5	10.5	11.5	11.5	11.2	11.2	11.2
FLUORIDE	1.8	F	00950	0.25	1.21	0.30	0.19	0.35	0.35	0.35	0.35
PHOSPHATE, TOTAL		PO ₄	00650	0.04	0.02	0.02	0.05	0.02	0.02	0.02	0.02
PHOSPHATE, DISSOLVED		PO ₄	00653	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
SILICA		SiO ₂	00956	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CALCIUM		Ca	00916	36	36	37	36	37	37	37	37
MAGNESIUM		Mg	00927	10	10	10	10	10	10	10	10
POTASSIUM		K	00929	1.4	1.3	1.2	1.3	1.3	1.3	1.3	1.3
SODIUM		Na	00929	5.6	5.6	5.6	5.5	5.6	5.6	5.5	5.5
RESIDUE, TOTAL		TOT. SOLIDS	00500	172	172	175	162	172	172	177	177
RESIDUE, FILTRABLE		DISS. SOLIDS	00515	167	170	175	162	172	172	177	177
OXYGEN, DISSOLVED		O ₂	00300	12.9	14.6	13.0	13.6	14.2	13.5	13.5	13.1
OXYGEN DEMAND, CHEMICAL		O	00335	7.5	6.5	5.6	6.5	6.5	6.5	6.5	6.5
NITROGEN, AMMONIA		N	00610	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NITROGEN, NITRATE/NITRATE	1/10	N	00630	0.25	0.27	0.28	0.27	0.29	0.32	0.32	0.32
NITROGEN, ORG. NUC		N	00605	0.16	0.16	0.12	0.12	0.12	0.16	0.16	0.16
CYANIDE	0.2	CN	00720	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
FOAMING AGENTS	0.5	MBAS	39260	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
HARDNESS		CaCO ₃	00900	131	131	134	131	130	134	134	134
ALUMINUM		Al	01150	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ARSENIC	50	As	01002	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BARIUM	1000	Ba	01007	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
BORON	1000	B	01022	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
CADMIUM	10	Cd	01027	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CHROMIUM	50	Cr	01034	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
COBALT		Co	01037	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
COPPER	5000	Cu	01042	2	2	2	2	2	2	2	2
IRON, TOTAL	1000	Fe	01045	70	0.10	0.10	20	0.10	0.10	0.10	0.10
LEAD	50	Pb	01051	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LITHIUM		Li	01132	2	1	1	2	1	1	1	1
MANGANESE	150	Mn	01055	5	7	2	2	2	2	2	2
MERCURY	2	Hg	71300	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NICKEL		Ni	01067	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
STRONTIUM		Sr	01082	100	100	100	100	100	100	100	100
ZINC	5000	Zn	01092	1	1	3	1	1	1	1	1
PHENOL-LIKE SUBSTANCES	1	PHENOL	32730	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SILVER	50	Ag	01077	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SELENIUM	10	Se	01145	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
RADIOACTIVITY	50	BETA PC/1	03501	1.49	1.38	1.42	1.42	1.42	1.42	1.42	1.42
SATURATION INDEX		(LI)		0.00	0.11	0.00	0.00	0.00	0.00	0.10	0.04

4 M. Chabinski
ENGINEER OF WATER PURIFICATION

CHIEF WATER CHEMIST
WATER PURIFICATION LABORATORY

REV 2-79

APPENDIX X
PATHOLOGY REPORT

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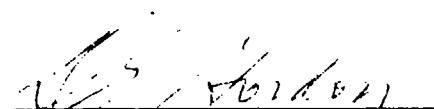
THIRTEEN WEEK SUBCHRONIC ORAL TOXICITY STUDY OF TRINITROTOLUENE (TNT),
CYCLOTTRIMETHYLENE TRINITRAMINE (RDX) AND TNT/RDX MIXTURES IN THE
FISCHER 344 RAT

Pathology Report

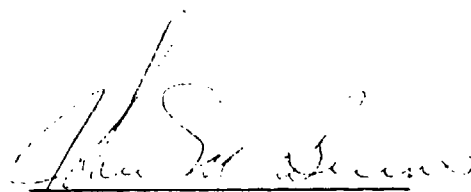
September 1980

IITRI Project No. L6116/L6121

Study Number 1



Donovan Gordon, DVM, Ph.D.
Consultant Histopathologist
Diplomate, American College
of Veterinary Pathologists

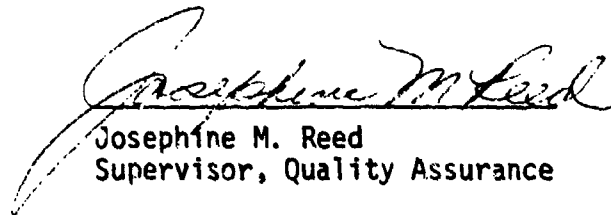


John M. Burns, M.S., DVM
Head, Pathology
Life Sciences Research

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Quality Assurance Statement
Pathology

Gross necropsy operations were inspected on February 15 and 22, 1980. The pathology report was audited between August 12 and September 2, 1980. All operations were performed as specified in the study protocol and were in compliance with Life Sciences Quality Assurance Criteria. All data and specimens generated during this study will be retained in the IITRI Life Sciences Archives as specified by government regulations.



Josephine M. Reed
Supervisor, Quality Assurance

Gross Necropsy Observations

Gross necropsy observations were summarized by sex and group and are presented in Pathology Appendix C.

After analysis of these tables, the following changes were considered treatment related:

TNT Groups

Spleen

Enlargement of the spleen was observed in Group V (females 3/10; males 2/10) and Group VI (females 10/10; males 10/10). In addition, the spleen of males was observed to be dark red or black in 3/10 Group VI males. These changes were not observed in any control animals or other TNT groups.

Testis

Small testes were observed in 9/10 Group VI males. This change was not observed in any control males (0/30) or other TNT groups (0/40).

Uterus

A "slender" uterus was observed in 4/10 Group VI females; whereas this change was not observed in any control females (0/30) or other TNT groups (0/40).

RDX Groups

Brain

Clots or injected vessels were observed in Group IX (females 1/10; male 0/10) and Group X (females 2/10; males 2/10). This change was considered as possibly treatment-related since in Group X most of these animals did not survive the full term of the study.

Uterus

A "slender" uterus was observed in 3/10 Group IX females. This change was considered as possibly treatment-related since many of these animals did not survive the full term of the study.

TNT/RDX Interaction Groups

No observations in these groups were considered treatment-related.

IITRI Project No. L6116/6121
Sponsor Project No. DAMD-17-79-C-9120/DAMD17-79-C-9161

Report of Histopathologic Findings

In accordance with the experimental protocol, a histopathologic examination was conducted on a series of H & E stained tissues from Fisher 344 Rats of IITRI Study No. L6116/6121 that were sacrificed at the conclusion of a Thirteen Week Subchronic Oral Toxicity Study of Trinitrotoluene (TNT), Cyclotrimethylene Trinitramine (RDX), and TNT/RDX mixtures. Tissues limited or extensive from all animals that died during the experimental period were also examined in a similar manner.

The necropsy of animals, collection and fixation of tissues, and preparation of stained tissue sections were conducted or directed by IIT Research Institute.

Tissues were examined according to a Level I or Level II designation as specified in the study protocol as amended.

The individual Pathology Report forms for all animals have been submitted by the IITRI archive.

The Histopathology Incidence Tables of all findings are presented by sex and treatment group in Pathology Appendix A.

Both of the above data contain a complete accountability of all tissues examined as required by the experimental protocol. The grading system utilized for all lesions in these reports and tables is as follows:

- 1 = minimal in severity
- 2 = mild in severity
- 3 = moderate severity
- 4 = marked severity
- 5 = extreme severity
- P = lesion present, no grade

A Study Histopathology Incidence Tables are presented in Pathology Appendix which presents the group incidence of all findings by sex and treatment group.

After analysis of the data the following morphologic alterations were considered to be treatment related:

TNT Groups

Brain

Focal lesions of vacuolation or malacia were present in the cerebellum of 6 of 10 males and 3 of 10 females at the highest treatment (Group VI) level. One animal (79-5027) was a spontaneous death. Both

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lesions were confined to the white tracts of the cerebellar folia. The vacuolar lesion consisted of small, oval empty spaces which were graded as minimal in severity and involved two males and two females. The leucomalacia consisted of demyelination and appeared to be a progression of the vacuolar lesion. The lesion was manifested by aggregations of lipid-laden macrophages in the immediate vicinity of vacuoles.

Liver

Multifocal lesions of hepatocellular hypertrophy (Hepatocytomegaly) were present in 6 of 10 males of Group V. The lesion consisted of an increase in cytoplasmic mass of hepatocytes located in the centrilobular to midzonal regions of affected lobules. The lesion in these animals was graded as minimal in severity. This lesion was also present in both males (10 of 10) and females (6 of 10) in Group VI. The lesion in these animals was diffuse, rather than multifocal, and ranged from minimal to mild in severity. In addition, there was an increase in the relative numbers of sinusoidal pigment-laden macrophages in single male and female animals in Group VI with the more severe hepatocytomegaly. The pigment was brown in coloration. Minimal, focal lesions of bile duct proliferation were also present in one male and six females of Group VI.

Kidney

An increase of yellowish-brown pigment was observed in 9 of 10 males and 10 of 10 females of Group V and all animals of both sexes in Group VI. The pigment which resembles lipofuscin was confined to the cytoplasm of tubular epithelial cells in the cortices of both kidneys. The lesion was focal and minimal in severity among the Group V animals, whereas, it was diffuse and more severe (minimal to moderate) among the Group VI animals.

Testis

Degeneration of the germinal epithelium lining seminiferous tubules was present in 1 of 10, 6 of 10, and 10 of 10 males in Groups IV, V, and VI, respectively. With respect to the extent and degree of tissue involvement, this lesion was focal to multifocal, unilateral or bilateral, and ranged from minimal to moderate in severity among animals in Groups IV and V. The testicular lesion in the Group VI animals was diffuse, bilateral and marked in severity. Histologically, those lesions graded as minimal to mild were characterized by a diminution of spermatozoa, spermatids and spermatocytes as a result of degeneration and necrosis. Spermatocytic and spermatotidic giant cells were also present in the lumen of some affected tubules and appeared to represent an early degenerative stage of this lesion. Lesions of moderate severity consisted of an absence of spermatozoa, spermatids and only a few spermatocytes remained in the degenerative tubule. The sertoli cells and spermatogonia appeared to be unaffected. Lesions graded as marked in severity consisted of atrophic seminiferous tubules lined with a few sertoli cells and spermatogonia. Diffuse intertubular edema was also in the testes of these animals. In addition to the above lesions, there was mild to moderate, diffuse hyperplasia of interstitial (Leydig) cells in both testes of all animals in Group VI. This lesion was not present among animals in Groups IV or V.

Spleen

There was mild diffuse, sinusoidal congestion involving 1 of 10 males and 4 of 10 females of Group V. This lesion was present in 9 of 10 males and 10 of 10 females of Group VI. The congestion was graded as mild to moderate in the Group VI animals. In addition to the above, a minimal to mild increase of hemosiderin-like pigment was present in macrophages of the red pulp of all males and females of Group VI.

RDX Groups

There were single males that died at the 300 and 600 mg/kg levels of RDX with multifocal lesions of testicular degeneration which involved either one or both testes. The lesions were graded as minimal to mild in severity. These lesions were probably treatment-related since they were confined to the higher treatment levels of RDX, and did not appear in the control animals. A more definitive histopathological evaluation of the subchronic effects of RDX at the 300-600 mg/kg levels was precluded by marked mortality during the early weeks of the study.

TNT/RDX Mixture Groups

Livers

Multifocal lesions of centrilobular to midzonal hepatocytomegaly were present in 1 of 10 males of Group XIV, 5 of 10 females of Group XV, and 1 of 10 females of Group XVI. The lesions were of minimal severity and resembled those reported among the TNT Groups. Increased amounts of pigment was present in sinusoidal macrophages of one of the above females in Group XV.

Kidney

A minimal, focal increase in pigment was observed in the cytoplasm of epithelial cells in the cortex of some animals in Groups XIV and XV. The distribution of affected animals consisted of 8 females in Group XIV, one male in Group XV, and 3 females in Group XV. The pigment was similar in appearance to that observed in the TNT treatment groups.

Testis

Bilateral, diffuse lesions of marked hypospermatogenesis were present in the testis of two males in Group XVI. This lesion was accompanied by mild, focal degeneration of the germinal epithelial cells. Both of these animals died during the 3rd to 4th weeks of the study.

With the exception of the above treatment-related changes, the remainder of the lesions tabulated among the control and test animals are regarded as incidental findings ascribed to naturally occurring diseases. These lesions were present, in most instances, among both control and test animals. In addition they have been reported as spontaneous lesions in this strain of rat by other investigators (1, 2, 3). No neoplastic lesions were observed in either control or test animals.

1. Coleman, G.L. et al, Pathological Changes During Aging in Barrier-Reared Fisher 344 Male Rats, Journal of Gerontology, 32:258-278, 1977.
2. Goodman, D.G. et al, Neoplastic and Noneoplastic Lesions in Aging F344 Rats, Toxicology and Applied Pharmacology 48:237-248, 1979.
3. AFIP Study Set (No. ML005-79) Pathology of the aging F344 Fisher Rat.

Summary and Conclusions

Treatment-related lesions were present in the brain, liver, kidney, testis and/or spleen of rats at the 25, 125, and 300 mg/kg levels of TNT. Based on this histopathological evaluation, the maximum no effect level of TNT appears to be 5 mg/kg/dy.

Probable, treatment-related degenerative lesions were confined to the testis of single males that died at the 300 and 600 mg/kg level of RDX. Most of the animals at the 300-600 mg/kg levels died during the first three weeks of the study. There was also considerable mortality at the 100 mg/kg level during the first twelve weeks of the study. The maximum no effect level with respect to histopathological lesions among survivors appears to 100 mg/kg/dy.

Among animals treated with the TNT/RDX mixture, treatment-related lesions were present in the liver, kidney, and/or testis of a few animals at the 125/30, 125/100, and 125/300 mg/kg mixture levels. All animals at the 5/300 and 125/300 mg/kg levels died during the first five weeks of the study which precluded an evaluation of the subchronic histologic effects if any at these levels. The maximum no-effect level for survivors of the remaining treatment groups appears to be the mixture of 5/30 mg/kg/dy.

The cause of death among animals in the RDX and TNT/RDX groups was not evident from the changes observed in the tissue sections. There were only two mortalities among animals in the TNT groups which were confined to the highest dietary level, the cause of death in one animal (79-5027) was ascribed to the vacuolar brain lesion.

APPENDIX X-A

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GROSS NECROPSY OBSERVATIONS

I

Group

ORGAN
Observation

STOMACH
Diverticuli
Dark green
SMALL INTESTINE
Mass/nodule
Peyer's patch
Colored (grey, red, green, yellow)
Blood/fluid within
COLON/RECTUM
Gas filled
Nodule

[illegible]A large rectangular grid consisting of 20 columns and 8 rows of squares, intended for drawing a picture related to the story.[illegible][illegible]

Group I: n=30
All Other Groups: n=10

FEMALE FISHER 344 RATS

GROSS NECROPSY OBSERVATIONS

Group

IAX
AX
AIX
IIIX
IIX

IX
X
XI
IIIA
IIA

IA
A
AI
III
II

I

[illegible][illegible][illegible][illegible]

ORGAN
Observation

LIVER
Granular
Pale
Greyish brown area
Brittle consistency
Mass/firm nodule
SPLEEN
Enlarged
Small
Dark red/black
KIDNEYS
Green
Pale

Group I: n=30
All Other Groups: n=10

FEMALE FISHER 344 RATS

GROSS NECROPSY OBSERVATIONS

ORGAN Observation	Group										IAX										IX										X										XI										IIIA										IIA										II										I																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

Group I: n=30
All Other Groups: n=10

GROSS NECROPSY OBSERVATIONS

Group

IAX
AX
ΛIX
IIIX
IIX

[illegible]

IX
X
XI
IIIA
IIA

[illegible]

IA
A
AI
III
II

[illegible]

I

[illegible]

Group I: n=30
All Other Groups: n=10

ORGAN
Observation

OTHER (con't)
EPIDIDYMIS
Light green
VULVA
Thick white discharge
Red stains
SUBCUTANEOUS HEMATOMA
(Right occipital region)
BLOOD CLOT (ORAL CAVITY)
CANNIBALISM
PITUITARY
Enlarged
Congested

Group

[illegible]

Group 1: n=30
All Other Groups: n=10

MALE FISHER 344 RATS

GROSS NECROPSY OBSERVATIONS

TAX
AX
AIX
IIIX
IIX

IX
X
XI
IIIA
IIA

IA
A
AI
III
II

1

Group

[illegible][illegible][illegible][illegible]

ORGAN
Observation

MESENTERIC LYMPH NODE
Enlarged/ swollen
BRAIN
Clot/injected vessels
CERVICAL CORD
Very soft
EYE
Opaque lens
URINARY BLADDER
Stone within/uroolith within

Group I: n=30
All Other Groups: n=10

MALE FISHER 344 RATS

GROSS NECROPSY OBSERVATIONS

ORGAN Observation	Group I										Group II										Group III										Group IV										Group V										Group VI										Group VII										Group VIII										Group IX										Group X										Group XI										Group XII										Group XIII										Group XIV										Group XV										Group XVI										Group XVII										Group XVIII										Group XIX										Group XX										Group XXI										Group XXII										Group XXIII										Group XXIV										Group XXV										Group XXVI										Group XXVII										Group XXVIII										Group XXIX										Group XXX										Group XXXI										Group XXXII										Group XXXIII										Group XXXIV										Group XXXV										Group XXXVI										Group XXXVII										Group XXXVIII										Group XXXIX										Group XL										Group XLI										Group XLII										Group XLIII										Group XLIV										Group XLV										Group XLVI										Group XLVII										Group XLVIII										Group XLIX										Group 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MALE FISHER 344 RATS

GROSS NECROPSY OBSERVATIONS

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Group

LIVER
Granular
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Brittle consistency
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Group I: n=30
All Other Groups: n=10

GROSS NECROPSY OBSERVATIONS

Group I: n=30
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MALE FISHER 344 RATS

GROSS NECROPSY OBSERVATIONS

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Group

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ORGAN	Observation
Brain	Normal
Heart	Normal
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Liver	Normal
Spleen	Normal
Stomach	Normal
Intestines	Normal
Uterus	Normal
Vagina	Normal
Cervix	Normal
Bladder	Normal
Rectum	Normal
Prostate	Normal
Testes	Normal
Epididymis	Normal
Vas Deferens	Normal
Urethra	Normal
Penis	Normal
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Areola	Normal
Nipple	Normal
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Appendix	Normal
Small Intestine	Normal
Large Intestine	Normal
Stomach	Normal
Pancreas	Normal
Gallbladder	Normal
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Vulva	Normal
Labia	Normal
Perineum	Normal
Anal	Normal
Rectum	Normal
Sigmoid	Normal
Cecum	Normal
Appendix	Normal
Small Intestine	Normal
Large Intestine	Normal
Stomach	Normal
Pancreas	Normal
Gallbladder	Normal
Liver	Normal
Spleen	Normal
Heart	Normal
Lungs	Normal
Brain	Normal
Kidney	Normal
Uterus	Normal
Vagina	Normal
Cervix	Normal
Bladder	Normal
Rectum	Normal
Prostate	Normal
Testes	Normal
Epididymis	Normal
Vas Deferens	Normal
Urethra	Normal
Penis	Normal
Scrotum	Normal
Breast	Normal
Areola	Normal
Nipple	Normal
Clitoris	Normal
Vulva	Normal
Labia	Normal
Perineum	Normal
Anal	Normal
Rectum	Normal
Sigmoid	Normal
Cecum	Normal
Appendix	Normal
Small Intestine	Normal
Large Intestine	Normal
Stomach	Normal
Pancreas	Normal
Gallbladder	Normal
Liver	Normal
Spleen	Normal
Heart	Normal
Lungs	Normal
Brain	Normal
Kidney	Normal
Uterus	Normal

TESTIS
Discolored/light green color
Soft, sluggish consistency
Small
OTHER
THYMUS
Slightly reddish
Enlarged
Small
CECUM
Gas filled/bloated
Dark green
Hard contents

Group I: n=30
All Other Groups: n=10

GROSS NECROPSY OBSERVATIONS

IAX
AX
AIX
IIIX
IIX

IX
X
XI
IIIA
IIA

IA
A
AI
III
II

I

group

[illegible][illegible][illegible][illegible]

OTHER (con't)
EPIDIDYHIS
Light green
VULVA
Thick white discharge
Red stains
SUBCUTANEOUS HEMATOMA
(Right occipital region)
BLOOD CLOT (ORAL CAVITY)
CANNIBALISM
PITUITARY
Enlarged
Congested

Group I: n=30
All Other Groups: n=10

APPENDIX X-B

IIT RESEARCH INSTITUTE

TNT

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

308

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level I Incidence
ADRENAL						
Angiectasis, unilateral						
Cytoplasmic vacuolation, cortex, bilateral						
ESOPHAGUS						
TRACHEA						
Inflammation, chronic						
THYROID						
PARATHYROID						

TNT

THIRTEEN WEEK SUBCHRONIC
FEMALE F100 344 RATS

II TRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
MESENTERIC LYMPH NODE						
Lymphoid hyperplasia						
SCIATIC NERVE						
BRAIN						
Malacia, cerebellar, focal						
Vacuolation, cerebellar, focal						
CERVICAL CORD						
EYE						
OPTIC NERVE						

1/10
2/10

TNT

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATS

IIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Level I	Level II	Level II	Level II	Level II	Level I
	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
URINARY BLADDER						
Mucosal hyperplasia, diffuse						1/10
Mucosal hyperplasia, focal						
Lymphoid infiltrate, submucosal,						
focal						
STOMACH						
Gastritis, ulcerative, forestomach,						
focal						
Mucosal necrosis, glandular stomach,						
focal	1/30					
DUODENUM						
JEJUNUM						
Enteritis, subacute						
Lymphoid hyperplasia, submucosal						

TNT

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATS

IIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level I Incidence
ILEUM						
Enteritis, subacute						
Lymphoid hyperplasia, submucosal						
COLON						
Nematode parasite(s) in lumen	4/30					1/10
LIVER						
Mononuclear cell infiltrates, sinusoidal, focal	18/30	6/10	8/10	6/10	3/10	6/10
Extramedullary hematopoiesis, focal	1/30	3/10	2/10	2/10	3/10	2/10
Necrosis, centrilobular, multifocal						
Mononuclear cell infiltrates, sinusoidal & portal, focal	4/30					
Mononuclear cell infiltrates, sinusoidal & portal, multifocal	4/30	3/10		4/10	7/10	3/10
Hepatocytomegaly, centrilobular midzonal, multifocal						6/10

Group I	Group II	Group III	Group IV	Group V	Group VI
control	1mg/kg/dy	5mg/kg/dy	25mg/kg/dy	125mg/kg/dy	300mg/kg/dy

ORGAN Lesion	Level I Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level I Incidence
LIVER (con't)					
Hepatocytomegaly, centrilobular- midzonal, diffuse					
Necrosis, random, focal	3/30				
Pigment in macrophages, focal					
Bile duct proliferation, focal					
Congestion, diffuse	2/30				
Hepatocellular hyperplasia, area	1/30				
Fatty change, focal					
Microgranulomas					
Microgranuloma					
SPLEEN					
Increased extramedullary hematopoiesis	1/30	3/10			
Congestion, diffuse					
Increased Pigment					
Lymphoid hyperplasia					

TNT

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 KATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Level I	Level II	Level II	Level II	Level II	Level I
	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
KIDNEY						
Hydronephrosis, bilateral	1/30					
Pyelitis, unilateral	1/30					
Nephropathy, chronic, unilateral	4/30		2/10			
Nephropathy, chronic, bilateral	13/30	7/10	3/10	4/10	3/10	10/10
Pigment, tubular, cortex, bilateral						
Congestion, diffuse, bilateral			1/10	1/10		
Microconcretions, focal, unilateral	4/30	2/10	2/10	3/10	4/10	1/10
Microconcretions, focal, bilateral	21/30	3/10	6/10	5/10	5/10	5/10
Micro-infarct, unilateral	1/30					
HEART						
Interstitial lymphoid infiltrates, focal						
Myocarditis, chronic, focal	8/30	3/10	3/10	1/10	7/10	5/10
Myocardial fibrosis, focal						
Aortitis						

STUDY HISTOPATHOLOGY INCIDENCE TABLE

TNT

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level I Incidence
LUNG						
Murine pneumonia, chronic, focal	25/30					9/10
Perivascularitis, subacute, focal						
Bronchopneumonia, subacute, focal	2/30					
Bronchopneumonia, subacute, multifocal						
Macrophages in alveoli, focal						
Hemorrhage, focal						
Eosinophil infiltrates, perivascular focal						2/10
MAMMARY GLAND						
PANCREAS						
Atrophy, acinar cell, focal						
Interstitial lymphoid infiltrates, focal						

STUDY HISTOPATHOLOGY INCIDENCE TABLE

TNT
THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATS

IIITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level I Incidence
TESTIS (con't)						
Germinal cell degeneration, multifocal, bilateral						
Interstitial (Leydig cell) hyperplasia, bilateral						
HypospERMatoGenesis, bilateral						
BONE MARROW						
Hypercellular						
Microgranuloma	2/30					2/10
Microgranulomas						
Illypocellular						
PROSTATE						
LESION						

RDX

THIRTEEN MONTH SUBCHRONIC
FEMALE FISHER 344 RATS

IIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control		Group VII 10mg/kg/dy		Group VIII 30mg/kg/dy		Group IX 100mg/kg/dy		Group X 300mg/kg/dy		Group XI 600mg/kg/dy	
	Incidence	Level I	Incidence	Level II	Incidence	Level I	Incidence	Level I	Incidence	Level II	Incidence	Level II
ADRENAL												
Angiectasis, unilateral												
Cytoplasmic vacuolation, cortex, bilateral												
ESOPHAGUS												
TRACHEA												
Inflammation, chronic							2/9					
THYROID												
PARATHYROID												

STUDY HISTOPATHOLOGY INCIDENCE TABLE

RDX

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATSIITRI PR CT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
MESENTERIC LYMPH NODE						
Lymphoid hyperplasia						
SCIATIC NERVE						
BRAIN						
Malacia, cerebellar, focal						
Vacuolation, cerebellar, focal						
CERVICAL CORD						
EYE						
OPTIC NERVE						

STUDY HISTOPATHOLOGY INCIDENCE TABLE

**IITRI PROJECT L6116/6121
STUDY NUMBER 1**

319

RDX STUDY HISTOPATHOLOGY INCIDENCE TABLE

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
ILEUM						
Enteritis, subacute						
Lymphoid hyperplasia, submucosal						
COLON						
Nematode parasite(s) in lumen	4/30		1/10			
LIVER						
Mononuclear cell infiltrates, sinusoidal, focal	18/30	5/10	7/10	7/10	1/10	5/10
Extramedullary hematopoiesis, focal	1/30	2/10		2/10		
Necrosis, centrilobular, multifocal						
Mononuclear cell infiltrates, sinusoidal & portal, focal	4/30		1/10			
Mononuclear cell infiltrates, sinusoidal & portal, multifocal	4/30	3/10	2/10			
Hepatocytomegaly, centrilobular midzonal, multifocal						

STUDY HISTOPATHOLOGY INCIDENCE TABLE

RDX
THIRTEEN WEEK SUBCHRONIC
FEMALE F344 344 RATS
IITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level IX Incidence	Level II Incidence
LIVER (con't)						
Hepatocytomegaly, centrilobular-midzonal, diffuse						
Necrosis, random, focal	3/30					
Pigment in macrophages, focal						
Bile duct proliferation, focal	2/30					
Congestion, diffuse	1/30					
Hepatocellular hyperplasia, area						
Fatty change, focal						
Microgranulomas		1/10			1/10	
Microgranuloma						
SPLEEN						
Increased extramedullary hematopoiesis	1/30	2/10	1/10	3/10		
Congestion, diffuse						
Increased Pigment						
Lymphoid hyperplasia						

STUDY HISTOPATHOLOGY INCIDENCE TABLE

RDX

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
KIDNEY						
Hydronephrosis, bilateral	1/30					
Pyelitis, unilateral	1/30					
Nephropathy, chronic, unilateral	4/30			1/10		
Nephropathy, chronic, bilateral	13/30	2/10	5/10	1/10		
Pigment, tubular, cortex, bilateral						
Congestion, diffuse, bilateral						
Microconcretions, focal, unilateral	4/30	5/10		1/10		1/10
Microconcretions, focal, bilateral	21/30	4/10	8/10	6/10	4/10	6/10
Micro-infarct, unilateral	1/30					
HEART						
Interstitial lymphoid infiltrates, focal						
Myocarditis, chronic, focal	8/30	3/10	1/10	1/10	1/10	1/9
Myocardial fibrosis, focal						
Aortitis						

THIRTEEN WEEK SUBCHRONIC
FEMALE ROSTER 344 RAIS

**II TRI PROJECT L6116/6121
STUDY NUMBER 1**

323

RDX

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY 1 PATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control		Group VII 10mg/kg/dy		Group VIII 30mg/kg/dy		Group IX 100mg/kg/dy		Group X 300mg/kg/dy		Group XI 600mg/kg/dy	
	Incidence	Level I	Incidence	Level II	Incidence	Level I	Incidence	Level I	Incidence	Level II	Incidence	Level II
OVARY												
UTERUS												
Endometritis, suppurative												
Luminal dilatation												
Cervicitis												
TESTIS												
Germinal cell degeneration, diffuse, bilateral												
Germinal cell degeneration, focal unilateral												
Germinal cell degeneration, focal, bilateral												
Germinal cell degeneration, multifocal, unilateral												

2/30
9/301/10
1/10
1/10

1/9

FDX

THIRTEEN WEEK SUBCHRONIC

Female 15:13:15
SLE: 4:15:34:15

**IITRI PROJECT L6116/6121
STUDY NUMBER 1**

ORGAN
Lesion

STUDY HISTOPATHOLOGY INCIDENCE TABLE

SLYKE FISH : 344 FATS

STUDY NUMBER 1

327

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATS

**IITRI PROJECT L6116/6121
STUDY NUMBER 1**

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I	Group XII	Group XIII	Group XIV	Group XV	Group XVI
	control	5mg/kg/dy 30mg/kg/dy	5mg/kg/dy 300mg/kg/dy	125mg/kg/dy 30mg/kg/dy	125mg/kg/dy 100mg/kg/dy	125mg/kg/dy 300mg/kg/dy
	Level I	Level II	Level I	Level I	Level II	Level II
	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
URINARY BLADDER						
Mucosal hyperplasia, diffuse						
Mucosal hyperplasia, focal				3/9		
Lymphoid infiltrate, submucosal,				3/9		
focal						
STOMACH						
Gastritis, ulcerative, forestomach,						
focal						
Mucosal necrosis, glandular stomach,						
focal	1/30					
DUODENUM						
JEJUNUM						
Enteritis, subacute						
Lymphoid hyperplasia, submucosal						

TNT/RDX

THIRTEEN WEEK SUBCHRONIC

FEMALE F344 RATS

IITRI PROJECT L6116/6121

STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control		Group XII 5mg/kg/dy 30mg/kg/dy		Group XIII 5mg/kg/dy 30mg/kg/dy		Group XIV 125mg/kg/dy 30mg/kg/dy		Group XV 125mg/kg/dy 100mg/kg/dy		Group XVI 125mg/kg/dy 300mg/kg/dy	
	Level I	Incidence	Level II	Incidence	Level I	Incidence	Level I	Incidence	Level II	Incidence	Level II	Incidence
ILEUM												
Enteritis, subacute												
Lymphoid hyperplasia, submucosal												
COLON												
Nematode parasite(s) in lumen		4/30						3/10				
LIVER												
Mononuclear cell infiltrates, sinusoidal, focal		18/30		5/10		1/10		6/10		8/10		3/10
Extramedullary hematopoiesis, focal		1/30		2/10				3/10		3/10		
Necrosis, centrilobular, multifocal												
Mononuclear cell infiltrates, sinusoidal & portal, focal		4/30										
Mononuclear cell infiltrates, sinusoidal & portal, multifocal		4/30		4/10						1/10		
Hepatocytomegaly, centrilobular												
midzonal, multifocal												1/10

INT/KXX

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group XII 5mg/kg/dy 300mg/kg/dy	Group XIII 5mg/kg/dy 300mg/kg/dy	Group XIV 125mg/kg/dy 30mg/kg/dy	Group XV 125mg/kg/dy 100mg/kg/dy	Group XVI 125mg/kg/dy 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
LIVER (con't)						
Hepatocytomegaly, centrilobular- midzonal, diffuse	3/30				1/10	
Necrosis, random, focal						
Pigment in macrophages, focal						
Bile duct proliferation, focal	2/30			1/10		
Congestion, diffuse	1/30					
Hepatocellular hyperplasia, area						
Fatty change, focal						
Microgranulomas						
Microgranuloma						
SPLEEN						
Increased extramedullary hematopoiesis	1/30	1/10		5/10	3/10	
Congestion, diffuse						
Increased Pigment						
Lymphoid hyperplasia						

STUDY HISTOPATHOLOGY INCIDENCE TABLE

TRIT/RDX
THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATS
IITRI PROJECT L6116/6121
STUDY NUMBER 1

Group I
control

Group XII
5mg/kg/dy
30mg/kg/dy

Group XIII
5mg/kg/dy
300mg/kg/dy

Group XIV
125mg/kg/dy
30mg/kg/dy

Group XV
125mg/kg/dy
100mg/kg/dy

Group XVI
125mg/kg/dy
300mg/kg/dy

Level I
Incidence

Level II
Incidence

Level I
Incidence

Level I
Incidence

Level II
Incidence

Level I
Incidence

Level II
Incidence

ORGAN Lesion	Group I control	Group XII 5mg/kg/dy 30mg/kg/dy	Group XIII 5mg/kg/dy 300mg/kg/dy	Group XIV 125mg/kg/dy 30mg/kg/dy	Group XV 125mg/kg/dy 100mg/kg/dy	Group XVI 125mg/kg/dy 300mg/kg/dy
KIDNEY						
Hydronephrosis, bilateral	1/30					
Pyelitis, unilateral	1/30					
Nephropathy, chronic, unilateral	4/30	1/10		2/10		
Nephropathy, chronic, bilateral	13/30	3/10		4/10	3/10	
Pigment, tubular, cortex, bilateral				8/10	8/10	1/10
Congestion, diffuse, bilateral						
Microconcretions, focal, unilateral	4/30	1/10	3/10			1/10
Microconcretions, focal, bilateral	21/30	6/10	5/10	4/10	4/10	7/10
Micro-infarct, unilateral	1/30					
HEART						
Interstitial lymphoid infiltrates, focal						
Myocarditis, chronic, focal	8/30	1/10		5/10		
Myocardial fibrosis, focal		1/10	1/10		2/10	1/8
Aortitis						

**THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATS**

IITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I	Group XII	Group XIII	Group XIV	Group XV	Group XVI
	control	5mg/kg/dy 30mg/kg/dy	5mg/kg/dy 30mg/kg/dy	125mg/kg/dy 30mg/kg/dy	125mg/kg/dy 100mg/kg/dy	125mg/kg/dy 300mg/kg/dy
	Level I	Level II	Level I	Level I	Level II	Level II
	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
LUNG						
Murine pneumonia, chronic, focal	25/30		6/10	10/10		
Perivascularitis, subacute, focal						
Bronchopneumonia, subacute, focal	2/30					
Bronchopneumonia, subacute, multifocal				1/10		
Macrophages in alveoli, focal				1/10		
Hemorrhage, focal						
Eosinophil infiltrates, perivascular focal						
MAMMARY GLAND						
PANCREAS						
Atrophy, acinar cell, focal						
Interstitial lymphoid infiltrates, focal						

TNT/PDX

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group XII 5mg/kg/dy 30mg/kg/dy	Group XIII 5mg/kg/dy 30mg/kg/dy	Group XIV 125mg/kg/dy 30mg/kg/dy	Group XV 125mg/kg/dy 100mg/kg/dy	Group XVI 125mg/kg/dy 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
OVARY						
UTERUS						
Endometritis, suppurative						
Luminal dilatation				1/10 4/10		
Cervicitis						
TESTIS						
Germinal cell degeneration, diffuse, bilateral	2/30 9/30					
Germinal cell degeneration, focal unilateral						
Germinal cell degeneration, focal, bilateral						
Germinal cell degeneration, multifocal, unilateral						

THIRTEEN WEEK SUBCHRONIC
FEMALE FISHER 344 RATS

IITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I	Group XII	Group XIII	Group XIV	Group XV	Group XVI
	control	5mg/kg/dy 300mg/kg/dy	5mg/kg/dy 300mg/kg/dy	125mg/kg/dy 30mg/kg/dy	125mg/kg/dy 100mg/kg/dy	125mg/kg/dy 300mg/kg/dy
	Level I	Level II	Level I	Level I	Level II	Level II
	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
TESTIS (con't)						
Germinal cell degeneration, multifocal, bilateral						
Interstitial (Leydig cell)						
hyperplasia, bilateral						
Hypospermatogenesis, bilateral						
BONE MARROW						
Hypercellular	2/30					
Microgranuloma						
Microgranulomas						
lypocellular			2/10			
PROSTATE						
LESION						

STUDY HISTOPATHOLOGY INCIDENCE TABLE

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATS

**IITRI PROJECT L6116/6121
STUDY NUMBER 1**

Group I	Group II	Group III	Group IV	Group V	Group VI
control	1mg/kg/dy	5mg/kg/dy	25mg/kg/dy	125mg/kg/dy	300mg/kg/dy

Level I

Level II

Level II

Level II

Incidence
Level II

Level I Incidence

ORGAN
Lesion

ADRENAL
Angiectasis, unilateral
Cytoplasmic vacuolation, cortex,
bilateral
ESOPHAGUS
TRACHEA
Inflammation, chronic
THYROID
PARATHYROID

[illegible][illegible][illegible][illegible][illegible]

										1/10									
--	--	--	--	--	--	--	--	--	--	------	--	--	--	--	--	--	--	--	--

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATS

IITRI PROJECT L6166/6121
STUDY NUMBER 1

	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
MESENTERIC LYMPH NODE	Incidence	Level II	Level II	Level II	Level II	Level I
Lymphoid hyperplasia	2/27					4/10 2/10
SCHIATIC NERVE						
BRAIN						
Malacia, cerebellar, focal						
Vacuolation, cerebellar, focal						
CERVICAL CORD						
EYE						
OPTIC NERVE						

TNT

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATS

IIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level I Incidence
URINARY BLADDER						
Mucosal hyperplasia, diffuse						2/10
Mucosal hyperplasia, focal						1/10
Lymphoid infiltrate, submucosal, focal						
STOMACH						
Gastritis, ulcerative, forestomach, focal	1/30					
Mucosal necrosis, glandular stomach, focal						
DUODENUM						
JEJUNUM						
Enteritis, subacute	1/30					
Lymphoid hyperplasia, submucosal	1/30					

TNT

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
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ORGAN Lesion	Incidence					
	Level I	Level II	Level II	Level II	Level II	Level I
ILEUM						
Enteritis, subacute	1/30					
Lymphoid hyperplasia, submucosal	2/30					
COLON						
Nematode parasite(s) in lumen						
LIVER						
Mononuclear cell infiltrates, sinusoidal, focal	3/30	8/10	4/10	8/10	7/10	
Extramedullary hematopoiesis, focal	2/30	3/10	2/10	3/10	3/10	1/10
Necrosis, centrilobular, multifocal	2/30				1/10	
Mononuclear cell infiltrates, sinusoidal & portal, focal						
Mononuclear cell infiltrates, sinusoidal & portal, multifocal			5/10	2/10	2/10	2/10
Hepatocytomegaly, centrilobular midzonal, multifocal					6/10	

TNT THIRTEEN WEEK SUBCHRONIC PALE FISHER 344 RATS IIITRI PROJECT L6116/6121 STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
LIVER (con't)	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
Hepatocytomegaly, centrilobular-midzonal, diffuse						10/10
Necrosis, random, focal						1/10
Pigment in macrophages, focal						1/10
Bile duct proliferation, focal		1/10				1/10
Congestion, diffuse						
Hepatocellular hyperplasia, area						
Fatty change, focal						
Microgranulomas						
Microgranuloma						
SPLEEN						
Increased extramedullary hematopoiesis	2/30	4/10	4/10	5/10	6/10	1/10
Congestion, diffuse				1/10	1/10	9/10
Increased Pigment						10/10
Lymphoid hyperplasia						

TNT
THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level I Incidence
KIDNEY						
Hydronephrosis, bilateral						
Pyelitis, unilateral						
Nephropathy, chronic, unilateral	7/30	1/10		1/10	1/10	1/10
Nephropathy, chronic, bilateral	22/30	8/10	10/10	8/10	9/10	6/10
Pigment, tubular, cortex, bilateral	1/30				9/10	10/10
Congestion, diffuse, bilateral		1/10				
Microconcretions, focal, unilateral						
Microconcretions, focal, bilateral						
Micro-infarct, unilateral						
HEART						
Interstitial lymphoid infiltrates, focal	1/30					
Myocarditis, chronic, focal	8/30	6/10	7/10	8/10	10/10	8/10
Myocardial fibrosis, focal						
Aoritis			1/10	1/10		

TNT

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group 1 control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level I Incidence
LUNG						
Murine pneumonia, chronic, focal	28/30					10/10
Perivascularitis, subacute, focal	3/30					1/10
Bronchopneumonia, subacute, focal	1/30					
Bronchopneumonia, subacute, multifocal						
	1/30					
Macrophages in alveoli, focal	3/30					2/10
Hemorrhage, focal						
Eosinophil infiltrates, perivascular focal						
MAMMARY GLAND						
PANCREAS						
Atrophy, acinar cell, focal						
Interstitial lymphoid infiltrates, focal	1/30					1/10

STUDY HISTOPATHOLOGY INCIDENCE TABLE

TRIT
THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATS

IIITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group II 1mg/kg/dy	Group III 5mg/kg/dy	Group IV 25mg/kg/dy	Group V 125mg/kg/dy	Group VI 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level II Incidence	Level I Incidence
OVARY						
UTERUS						
Endometritis, suppurative						
Luminal dilatation						
Cervicitis						
TESTIS						
Germinal cell degeneration, diffuse, bilateral						10/10
Germinal cell degeneration, focal unilateral					1/10	
Germinal cell degeneration, focal, bilateral					3/10	
Germinal cell degeneration, multifocal, unilateral				1/10		

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THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATS

**IITRI PROJECT L6116/6121
STUDY NUMBER 1**

343

RDX

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATS

II TRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
ADRENAL						
Angiectasis, unilateral	2/30					
Cytoplasmic vacuolation, cortex, bilateral	1/30			1/10		
ESOPHAGUS						
TRACHEA						
Inflammation, chronic	1/30		1/8			
THYROID						
PARATHYROID						

RDX

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATS

IIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
MESENTERIC LYMPH NODE						
Lymphoid hyperplasia	2/27					
SCHIATIC NERVE						
BRAIN						
Malacia, cerebellar, focal						
Vacuolation, cerebellar, focal						
CERVICAL CORD						
EYE						
OPTIC NERVE						

STUDY HISTOPATHOLOGY INCIDENCE TABLE

RDX
THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATS

IIITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg, 3y
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
URINARY BLADDER						
Mucosal hyperplasia, diffuse						
Mucosal hyperplasia, focal						
Lymphoid infiltrate, submucosal, focal						
STOMACH						
Gastritis, ulcerative, forestomach, focal	1/30					
Mucosal necrosis, glandular stomach, focal						
DUODENUM						
JEJUNUM						
Enteritis, subacute	1/30					
Lymphoid hyperplasia, submucosal	1/30					

RDX

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
ILEUM						
Enteritis, subacute	1/30					
Lymphoid hyperplasia, submucosal	2/30					
COLON						
Nematode parasite(s) in lumen			2/10			
LIVER						
Mononuclear cell infiltrates, sinusoidal, focal	3/30	8/10	4/10		4/10	5/10
Extramedullary hematopoiesis, focal	2/30	4/10	1/10			
Necrosis, centrilobular, multifocal	2/30					
Mononuclear cell infiltrates, sinusoidal & portal, focal						
Mononuclear cell infiltrates, sinusoidal & portal, multifocal		1/10				
Hepatocytomegaly, centrilobular midzonal, multifocal						

STUDY HISTOPATHOLOGY INCIDENCE TABLE

RDX
THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATS
IITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
LIVER (con't)						
Hepatocytomegaly, centrilobular- midzonal, diffuse						
Necrosis, random, focal					1/10	
Pigment in macrophages, focal						
Bile duct proliferation, focal			1/10			
Congestion, diffuse						
Hepatocellular hyperplasia, area						
Fatty change, focal						
Microgranulomas						
Microgranuloma						
SPLEEN						
Increased extramedullary hematopoiesis	2/30	4/10	1/10		1/10	
Congestion, diffuse						
Increased Pigment						
Lymphoid hyperplasia					1/10	

RD

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATS

IITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I	Level II	Level I	Level I	Level II	Level II
KIDNEY	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
Hydronephrosis, bilateral						
Pyelitis, unilateral	7/30		2/10	1/10		1/10
Nephropathy, chronic, unilateral	22/30	8/10	7/10	1/10		
Nephropathy, chronic, bilateral	1/30					
Pigment, tubular, cortex, bilateral						
Congestion, diffuse, bilateral						
Microconcretions, focal, unilateral						
Microconcretions, focal, bilateral						
Micro-infarct, unilateral						
HEART						
Interstitial lymphoid infiltrates, focal	1/30					
Myocarditis, chronic, focal	8/30	8/10	6/10	1/10	1/10	
Myocardial fibrosis, focal						
Aortitis						

RDX

THIRTEEN MONTH SUBCHRONIC
MALE FISHER 3/4 RATS

IIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
LUNG						
Murine pneumonia, chronic, focal	28/30		10/10	8/10		
Perivascularitis, subacute, focal	3/30					
Bronchopneumonia, subacute, focal	1/30		1/10			
Bronchopneumonia, subacute, multifocal	1/30					
Macrophages in alveoli, focal	3/30					
Hemorrhage, focal						
Eosinophil infiltrates, perivascular focal						
MAMMARY GLAND						
PANCREAS						
Atrophy, acinar cell, focal	1/30					
Interstitial lymphoid infiltrates, focal						

RDX

THIRTEEN SUBCHRONIC
MALE FISHER 344 RATS

IIITR1 PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

Group I Group VII Group VIII Group IX Group X Group XI
control 10mg/kg/dy 30mg/kg/dy 100mg/kg/dy 300mg/kg/dy 600mg/kg/dy

Level I Level II Level I Level I Level II Level II

Incidence

Incidence

Incidence

Incidence

Incidence

ORGAN
Lesion

OVARY
UTERUS
Endometritis, suppurative
Luminal dilatation
Cervicitis
TESTIS
Germinal cell degeneration, diffuse, bilateral
Germinal cell degeneration, focal unilateral
Germinal cell degeneration, focal, bilateral
Germinal cell degeneration, multifocal, unilateral

1/10

RDX STUDY HISTOPATHOLOGY INCIDENCE TABLE

THIRTEEN WEEK SUBCHRONIC
MALE F344 RATS

IIITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group VII 10mg/kg/dy	Group VIII 30mg/kg/dy	Group IX 100mg/kg/dy	Group X 300mg/kg/dy	Group XI 600mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
TESTIS (con't)						
Germinal cell degeneration, multifocal, bilateral					1/9	
Interstitial (Leydig cell) hyperplasia, bilateral						
Hypospematogenesis, bilateral						
BONE MARROW						
Hypercellular	1/30					
Microgranuloma						
Microgranulomas						
lipocellular						
PROSTATE						
LESION						

TNT/ROK

THIRTEEN WEEK SUBCHRONIC

MALE FISHER 344 RATS

IITRI PROJECT L6116/6121

STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group XII 5mg/kg/dy 30mg/kg/dy	Group XIII 5mg/kg/dy 300mg/kg/dy	Group XIV 125mg/kg/dy 30mg/kg/dy	Group XV 125mg/kg/dy 100mg/kg/dy	Group XVI 125mg/kg/dy 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
ADRENAL	2/30					
Angiectasis, unilateral	1/30					
Cytoplasmic vacuolation, cortex, bilateral						
ESOPHAGUS						
TRACHEA	1/30			2/10		
Inflammation, chronic						
THYROID						
PARATHYROID						

THIRTEEN WEEK SUPRASONIC
MALE FISHER 24 RATS

**IITRI PROJECT L6116/6121
STUDY NUMBER 1**

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I	Group XII	Group XIII	Group XIV	Group XV	Group XVI
	control	5mg/kg/dy 30mg/kg/dy	5mg/kg/dy 300mg/kg/dy	125mg/kg/dy 30mg/kg/dy	125mg/kg/dy 100mg/kg/dy	125mg/kg/dy 300mg/kg/dy
	Level I	Level II	Level I	Level I	Level II	Level II
	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
MESENTERIC LYMPH NODE						
Lymphoid hyperplasia	2/27					
SCIATIC NERVE						
BRAIN						
Malacia, cerebellar, focal						
Vacuolation, cerebellar, focal						
CERVICAL CORD						
EYE						
OPTIC NERVE						

TNT/R1X

THIRTEEN WEEK SUBCHRONIC

MALE FISHER 344 RATS

IITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group XII 5mg/kg/dy 30mg/kg/dy	Group XIII 5mg/kg/dy 300mg/kg/dy	Group XIV 125mg/kg/dy 30mg/kg/dy	Group XV 125mg/kg/dy 100mg/kg/dy	Group XVI 125mg/kg/dy 300mg/kg/dy
	Level I	Level II	Level I	Level I	Level II	Level II
URINARY BLADDER	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
Mucosal hyperplasia, diffuse						
Mucosal hyperplasia, focal						
Lymphoid infiltrate, submucosal, focal				1/9		
STOMACH						
Gastritis, ulcerative, forestomach, focal	1/30					
Mucosal necrosis, glandular stomach, focal						
DUODENUM						
JEJUNUM						
Enteritis, subacute	1/30					
Lymphoid hyperplasia, submucosal	1/30					

TNT/RDX

THIRTEEN WEEK SUBCHRONIC

MALE F1-H11 344 RATS

IITRI PROJECT L6116/6121

STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group XII 5mg/kg/dy 30mg/kg/dy	Group XIII 5mg/kg/dy 300mg/kg/dy	Group XIV 125mg/kg/dy 30mg/kg/dy	Group XV 125mg/kg/dy 100mg/kg/dy	Group XVI 125mg/kg/dy 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
ILEUM						
Enteritis, subacute	1/30					
Lymphoid hyperplasia, submucosal	2/30					
COLON						
Nematode parasite(s) in lumen			1/6	2/10		
LIVER						
Mononuclear cell infiltrates, sinusoidal, focal	3/30	7/10		5/10	5/10	2/10
Extramedullary hematopoiesis, focal	2/30	4/10		4/10	5/10	
Necrosis, centrilobular, multifocal	2/30					
Mononuclear cell infiltrates, sinusoidal & portal, focal						
Mononuclear cell infiltrates, sinusoidal & portal, multifocal		1/10			1/10	
Hepatocytomegaly, centrilobular						
midzonal, multifocal						

TNT/REX

THIRTEEN WEEK SUBCHRONIC

MALE FISHER 344 RATS

IITRI PROJECT L6116/6121

STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group XII 5mg/kg/dy 30mg/kg/dy	Group XIII 5mg/kg/dy 300mg/kg/dy	Group XIV 125mg/kg/dy 30mg/kg/dy	Group XV 125mg/kg/dy 100mg/kg/dy	Group XVI 125mg/kg/dy 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
LIVER (con't)						
Hepatocytomegaly, centrilobular- midzonal, diffuse						
Necrosis, random, focal						
Pigment in macrophages, focal						
Bile duct proliferation, focal				3/10		
Congestion, diffuse						
Hepatocellular hyperplasia, area						
Fatty change, focal						
Microgranulomas						
Microgranuloma						
SPLEEN						
Increased extramedullary hematopoiesis	2/30	5/10		1/10	6/10	
Congestion, diffuse				2/10		
Increased Pigment				8/10		
Lymphoid hyperplasia						

TNT/ROX
STUDY HISTOPATHOLOGY INCIDENCE TABLE

THIRTEEN WEEK SUBCHRONIC

MALE FISH 2 344 FATS

IITRI PROJECT L6116/6121
STUDY NUMBER 1

ORGAN Lesion	Group I control	Group XII 5mg/kg/dy 30mg/kg/dy	Group XIII 5mg/kg/dy 300mg/kg/dy	Group XIV 125mg/kg/dy 30mg/kg/dy	Group XV 125mg/kg/dy 100mg/kg/dy	Group XVI 125mg/kg/dy 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
KIDNEY						
Hydronephrosis, bilateral						
Pyelitis, unilateral						
Nephropathy, chronic, unilateral	7/30	2/10	1/10		2/10	
Nephropathy, chronic, bilateral	22/30	6/10		10/10	5/10	
Pigment, tubular, cortex, bilateral	1/30				1/10	
Congestion, diffuse, bilateral						
Microconcretions, focal, unilateral						
Microconcretions, focal, bilateral						2/10
Micro-infarct, unilateral						
HEART						
Interstitial lymphoid infiltrates, focal	1/30					
Myocarditis, chronic, focal	8/30	3/10	4/10	7/10	2/10	
Myocardial fibrosis, focal		1/10				
Aortitis						

TNT/ROZ

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATSIITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group XII 5mg/kg/dy 30mg/kg/dy	Group XIII 5mg/kg/dy 300mg/kg/dy	Group XIV 125mg/kg/dy 30mg/kg/dy	Group XV 125mg/kg/dy 100mg/kg/dy	Group XVI 125mg/kg/dy 300mg/kg/dy
	Level I Incidence	Level II Incidence	Level I Incidence	Level I Incidence	Level II Incidence	Level II Incidence
LUNG						
Murine pneumonia, chronic, focal	28/30		4/10	10/10		
Perivascularitis, subacute, focal	3/30			1/10		
Bronchopneumonia, subacute, focal	1/30					
Bronchopneumonia, subacute, multifocal	1/30					
Macrophages in alveoli, focal	3/30		1/10			
Hemorrhage, focal						
Eosinophil infiltrates, perivascular focal						
MAMMARY GLAND						
PANCREAS						
Atrophy, acinar cell, focal						
Interstitial lymphoid infiltrates, focal	1/30			1/10		

THIRTEEN % SUBCHRONIC

MALE FISHES 344 RATS

IITRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I	Group XII	Group XIII	Group XIV	Group XV	Group XVI
	control	5mg/kg/dy 30mg/kg/dy	5mg/kg/dy 300mg/kg/dy	125mg/kg/dy 30mg/kg/dy	125mg/kg/dy 100mg/kg/dy	125mg/kg/dy 300mg/kg/dy
	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
	Level I	Level II	Level I	Level I	Level II	Level II
OVARY						
UTERUS						
Endometritis, suppurative						
Luminal dilatation						
Cervicitis						
TESTIS						
Germinal cell degeneration, diffuse, bilateral						
Germinal cell degeneration, focal unilateral						
Germinal cell degeneration, focal, bilateral						
Germinal cell degeneration, multifocal, unilateral						

TNT/RDX

THIRTEEN WEEK SUBCHRONIC
MALE FISHER 344 RATSII TRI PROJECT L6116/6121
STUDY NUMBER 1

STUDY HISTOPATHOLOGY INCIDENCE TABLE

ORGAN Lesion	Group I control	Group XII 5mg/kg/dy 30mg/kg/dy	Group XIII 5mg/kg/dy 300mg/kg/dy	Group XIV 125mg/kg/dy 30mg/kg/dy	Group XV 125mg/kg/dy 100mg/kg/dy	Group XVI 125mg/kg/dy 300mg/kg/dy
	Level I	Level II	Level I	Level I	Level II	Level II
TESTIS (con't)	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
Germlinal cell degeneration, multifocal, bilateral						
Interstitial (Leydig cell) hyperplasia, bilateral						2/10
Hypospematogenesis, bilateral						
BONE MARROW						
Hypercellular	1/20					
Microgranuloma						
Microgranulomas hypocellular						
PROSTATE						
LESION						

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SUPPLEMENTARY

INFORMATION



DEPARTMENT OF THE ARMY Mrs. Idoine/jkp/AV 343-7325
US ARMY MEDICAL RESEARCH AND DEVELOPMENT COMMAND
FORT DETRICK, FREDERICK, MD 21701

REPLY TO
ATTENTION OF:

SGRD-RMS


21 April 1982

SUBJECT: Changes to AD#A108447

Defense Technical Information Center
ATTN: DTIC-DDA, Mrs. Crumbacker
Alexandria, VA 22314

1. Reference is to the report with AD#A108447.
2. We find that the subject report was submitted to DTIC without review or approval from this office. We have revised the cover page (Incl 1) and first page of the DD Form 1473 (Incl 2) to correct inconsistencies and complete these pages in accordance with USAMRDC requirements.
3. Request that you substitute the inclosed revised pages for the original cover page and first page of the subject document. It is important also that the designation, "Phase I Final Report - Oct 79-Sep 80," be used in the descriptive note in the data base. We have substituted the revised pages in our file copies.
4. If there are questions concerning this matter please contact Mrs. Jane Idoine of this office at Area Code (301) 663-7325.

2 Incl
as


(Mrs.) PATRICIA A. MADIGAN
Technical Review Group
Scientific and Technical
Information Division

AD _____

IITRI Project Nos. L6116/L6121
Study No. 1

THIRTEEN WEEK ORAL (DIET) TOXICITY STUDY OF TRINITROTOLUENE
(TNT), HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX) AND
TNT/RDX MIXTURES IN THE FISCHER 344 RAT

PHASE I FINAL REPORT

Prepared by:

Barry S. Levine
E. Marianna Furedi
Donovan E. Gordon
John M. Burns
Paul M. Lish

September 1981

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IIT Research Institute
10 West 35th Street
Chicago, IL 60616

Project Officer: Jesse J. Barkley, Jr.

Approved for public release: Distribution Unlimited

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1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This study was conducted to evaluate the toxicity of the munitions compounds 2,4,6-trinitrotoluene (TNT; CAS Reg. No. 118-96-7) and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX; CAS Reg. No. 121-82-4), and their potential toxic interactions in Fischer 344 rats when administered in the diet for at least 13 weeks. The data derived were also to be used to select dose levels for comprehensive chronic toxicity/carcinogenicity studies. Groups of 10 rats per sex received TNT at doses of 1, 5, 25, 125 or 300 mg/kg/day; RDX at doses of 10, 30, 100, 300 or 600 mg/kg/day; and the following combinations of these		

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